American Aviation

The Independent Voice of American Aeronautics — **MARCH 1, 1944**

Let's Test Them

Fortnightly Review

IT IS generally agreed that when the military situation permits, the airlines should be allowed to have some of the transport type planes now coming off the production lines. Passenger, mail and cargo loads are indisputable evidence that this should be done.

However, will these airplanes be able to pass the necessary tests for airline service? Military and commercial requirements, although not widely at variance, are two different things. And there is only one way to answer the question—allow the Civil Aeronautics Administration to put Army and Navy passenger and cargo planes through the tests which such planes must pass before they may be flown commercially.

This can be accomplished by the Army or the Navy, or both, arranging to lend to the CAA the necessary airplanes for the tests. The loan can be effected at a time when the military situation is clearer, as it should be in the not too distant future.

Thus, even before airplanes off the production lines became available to the airlines, the operators—and even more important, the manufacturers—would know which ships could immediately go into commercial service and which need modifications. The question of whether an airplane can shed its war paint and go right to work commercially would be answered. And manufacturers could do the engineering preparatory to making necessary changes in models not meeting the requirements of civil air transportation regulations.

We understand that military authorities have so far not raised any serious objection to such tests, the only ques-

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Now Head of NAA

William R. Enyart, president of Simmonds Aerocessories, Inc., has been elevated from vice president to president of the National Aeronautic Association, succeeding Gill Robb Wilson.

(See page 30.)

Late Bulletins

ALPA Withdraws

The Air Line Pilots Association has withdrawn its petition asking CAB to delay action on Western Air Lines' acquisition of Inland Air Lines until a seniority list had been agreed upon. Disclosure that the agreement had been withdrawn was made at oral argument on Feb. 24. A CAB final decision is expected soon.

Hearings Scheduled

Senate Foreign Relations Committee, headed by Sen. Tom Connally (D., Tex.) is scheduled to begin consideration o international aviation on Mar. 1, with Assistant Secretary of State Adolf A. Berle and other State Dept. witnesses testifying.

Trend of the News

Writing Off Plants: A new touch was given to the perennial question of what is to be done with "excess" aircraft plants after the war when Secretary of Commerce Jesse Jones recently told an Appropriations Sub-Committee of the House of Representatives that the government expected to lose the principal portion of its $2,700,000,000 investment in aviation plants.

Asked specifically by Rep. Karl Stefan (R., Neb.), whether he saw any possibility of getting much of this investment back, Jones replied: "No."

"You are not in favor of the Government keeping that investment and operating it after the war, are you?" asked Rep. Albert E. Carter (R., Cal.), to which Jones replied: "No. In the first place, we would have no use for the output, you see."

When Carter suggested that it might be converted to peacetime products, Jones said: "Of course you can convert the buildings. In all of these war plants I assume we will be able to convert the buildings and a very substantial amount of equipment to peacetime pursuits. A lot of the technical equipment and machinery would not be serviceable, but that is all, of course, just a war cost, building these enormous plants for the manufacture of airplanes and all of the things necessary for planes."

"Your idea, as I understand it, is that a lot of that will have to be written off as a dead loss?" Carter suggested.

"Yes; I should think a very large part of it," Jones replied.

Getting the Jump: Although the Government has made no actual progress toward a definite plan for handling surplus aircraft after the war, the shipping industry can now get down to cases. The U. S. Maritime Commission last fortnight officially solicited proposals by U. S. citizens for the acquisition and use of modern American flag vessels and the use of such tonnage in postwar long-term operation between U. S. and ports in Holland and Belgium. Action in this field may spark the aircraft and air transport industries into new demands for definite policy.

Postwar Moves: Practically all major aspects of the aircraft industry's eventual reconversion to peacetime are involved in the Baruch-Hancock report and the various moves which have followed its release. At least the framework for reconversion is becoming

(Turn to page 6)

20c

GUARDIAN ANGEL

They're on their way, deep into enemy territory—a fleet of Forts at 30,000 feet, with their guardian angels perched high above.

FW's? ME's? Zero's? Any Axis fighter that pokes its nose up at the bombers is a "sitting duck" for diving Thunderbolts. Because, at the Army's request, Republic designed and builds the famous P-47 Thunderbolt to fight higher and hit harder than any other airplane in the world.

In doing this job, Republic has solved many longstanding problems of efficient flying in the stratosphere. This knowledge will contribute much to America's leadership in world air transport after the war—when giant airliners will travel faster and more economically—because they'll fly high where the flying is best. Republic Aviation Corporation, Farmingdale, L. I., New York, and Evansville, Ind.

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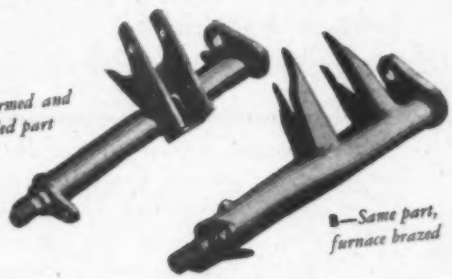

A—*Formed and welded part*

B—*Same part, furnace brazed*

ELECTRIC FURNACE BRAZING OF PARTS INTO ASSEMBLIES—a highly successful Goodyear Aircraft adaptation of furnace brazing permits assembly from simple machine parts of many items that formerly had to be "hogged out" or welded—saving time and labor, and producing a strong part at low cost.

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THE DEADLY FG-1 CORSAIR FIGHTER is being built by Goodyear Aircraft, now one of its principal producers. The quality of Goodyear craftsmanship and methods, as demonstrated in production-line output of this "hot" airplane, has won high commendation from the U. S. Navy.

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LET'S ALL BACK THE ATTACK—WITH WAR BONDS

GOODYEAR AIRCRAFT

Highlights from LAISTER-KAUFFMANN
the story of Jack Laister

No desk-born executive is Jack Laister, President of Laister-Kauffmann Aircraft Corporation. At 13 he was building National prize-winning model airplanes, at 14 creating his first glider, at 15 making his first flight, a few years later earning his tuition at Detroit's Lawrence Tech as the school's gliding instructor. Here he designed and supervised the building of experimental gliders—two of which are now in use for Army glider pilot training. Star of this group was the famous Yankee Doodle. In the heart of many a boy now in the air-service of his country there is a special place for Jack Laister and his beloved Yankee Doodle . . .

Thus, in 1938, when Jack Laister was graduated as an Aeronautical Engineer, he could approach the business world backed by achievement seldom seen in a youngster of 24. While in college he worked as a mechanic in an experimental laboratory; by the day of his graduation he was Assistant Chief Engineer in another organization. Therefore, it was no surprise when a responsible position with an air craft manufacturer took 25-year-old Jack Laister to California. And when, two years later, he accepted a job of still more importance in the Middle West, friends agreed that it was *just what they had expected of him!*

Finally, when gliders assumed their present tactical importance in the war, it seemed almost a foregone conclusion that Jack Laister would build them for our government.

Jack Laister's desk is big . . . big enough to serve as a designing board . . . big enough to spread a half dozen blue prints on . . . big enough to take care of the job into which he's putting the last measure of his intelligence, his experience and his devotion—Laister-Kauffmann's war contract—Gliders for the Army—Gliders for the ATTACK!

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Wings

Laister-Kauffmann
Aircraft Corporation
ST. LOUIS (17) MISSOURI

American Aviation

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WINGTIPS

by Abel Grasshopper

[AVIATION NEWS AND GOSSIP]

Rumors come and rumors go, but that quiet, determined gang of scrappy volunteers at Civil Air Patrol just goes rolling along . . . and the grand, country-wide job C.A.P. is doing reflects the indomitable spirit of that home-front stalwart who commands.

Their Coast patrol chore blazed a record in those grim early days of our need . . . when the regulars took over the outfit, turned to and turned in a job of emergency courier work which received grateful halleluiahs of harried war-plant operators from coast to coast . . . At the moment, C.A.P., en masse, has taken over the job of training the Air Corps Enlisted Reserve. C.A.P. . . . Salute!

* * * *

Among the new names and connotations which the war has added to America's lurid vocabulary, none have been more significant or colorful than "Grasshopper." Originally applied by amazed officers at an Air Corps demonstration, it became a colloquialism for our "mighty atom" that echoes in terms of praise from training centers at home and from far-flung battle lines.

* * * * * * * *

That daring young man in the P-51, who single-handed chased the big bad Focke Wolves from a fortress formation over Bremen . . . took on an even fifty Huns . . . shot down five in his stride. . . .

Nailed with the goods by alert Intelligence back at base . . . he facetiously chirps, "I seen my duty and I done it". Quite a lad this ex-Flying Tiger . . . Army Air Corps Ace . . . and our nominee for Pilot Of The Month.

"TRANSLATOR" John B. Kennedy
Famed News Commentator

Only personal aircraft company to receive Army and Navy "E"

AERONCA

FIRST Grasshopper FINEST

MIDDLETOWN, OHIO

Trends

(Continued from page 1)

clearer, although lengthy argument is certain over the issue of whether it will actually be administered through Government directive or Congressional legislation. The Administration took the lead, getting the first jump, but Congress will have the final vote—and most observers are willing to bet that Congress will assert itself.

For the record, here is the calendar of first moves and the personalities who first emerged:

On Feb. 9 Sen. George's Senate Postwar Planning Committee brought out its long awaited report on demobilization and reconversion. On Feb. 19 the Office of War Mobilization released the Baruch-Hancock report. Same day Sen. George said both reports were in accord, except for the question of Administration v. Congressional control of the program. On Feb. 21 OWM Director James Byrnes revealed the Administration had gotten the jump on Congress with President Roosevelt signing an executive order setting up the Surplus War Property Administration.

Byrnes announced appointment of:

William L. Clayton as Surplus War Property Administrator under the directive. Clayton resigned as assistant secretary of commerce and from his duties with the Export-Import Bank and the Defense Supplies Corp.

John T. Hancock, Baruch's assistant in the preparation of the report, as Chairman of the War Contract Termination Board.

Brig. Gen. Frank T. Hines, now director of the Veterans Administration, as Retraining and Reemployment Director (called "work director" in the report).

Mrs. Anna Rosenberg, now regional director for WMC in New York State, as top assistant to Gen. Hines.

The executive order setting up the Surplus War Property Administrator put the new agency under Byrnes' Office of War Mobilization.

•

Russian Air Plans: While most official sources apparently have been unable to get any conclusive line on Russia's postwar international air policies, Vice President Wallace is on the record with a prediction. After the war is won, Wallace says in the current *Survey Graphic*, Russia hopes to see a highway by land and air that will link Moscow and Chicago. Wallace said that Foreign Minister Molotov, while here in 1942, expressed himself in favor of such a route.

•

No Draft Deferment: Selective Service officials have indicated they may scrap at any moment the special deferment policy for West Coast aircraft workers. To ease the resulting situation, a program calling for release of a certain fixed percentage of previously deferred workers each month will probably be devised.

•

Selling AAF Surplus: The Army Air Forces Materiel Command is actively trying to sell some of the surplus equipment now on its hands. Without waiting for OWM or Congressional green lights, it issued this notice last month:

"Raw and fabricated materials, standard parts, motors, hardware, fabrics, precision tools, equipment, and other surplus stocks are being offered for sale by the AAF. Companies interested in such materials, and who are desirous of having their names placed on the active bidders list, are invited to write the AAF Materiel Command, Midcentral Procurement District, 111 West Jackson Boulevard, Chicago 4, Attention: Redistribution & Salvage Section."

Meanwhile, aircraft manufacturers are still awaiting approval by WPB and military authorities of some plan whereby they can move millions of dollars of unusable surplus materials from their plants. (*American Aviation*, Feb. 15.)

Serving . . .
THE WORLD'S GREATEST AIRLINE —

Routes of the World's Largest Airline . . . the Army Air Forces Airways

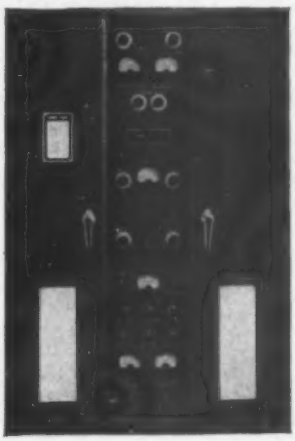
Signal Corps Photo

Airdrome Traffic Control Tower somewhere along the lines of the Army Air Forces. Operated by the Army Airways Communications System Wing. Maintains two-way communication between airfield and aircraft.

Our Proudest Achievement — A gigantic network of air routes—more than 100,000 miles of communications, landing fields and supply depots *—that's the Army Air Forces Airways.* RADIO RECEPTOR'S contribution to the equipment of the radio life-line of these airways is its proudest achievement. Developed in pre-war days . . . refined and simplified in the crucible of conflict, RADIO RECEPTOR airway and airdrome equipment will be ready, when victory comes, to doff its war paint and resume civilian dress.

Plan Now for Victory — Although our entire production now goes to the Army Air Forces, the Signal Corps and other war agencies, our engineers will be glad to confer with you on your plans for peace. The 6,000 new airports, estimated by the CAA as needed by the country, will require virtually the same type of equipment which is being supplied to the military services. To the thousands of municipalities planning the expansion of existing airports, or the construction of new ones, we offer our experience.

Write for our interesting, non-technical booklet, "Highways of the Air", which explains the importance of radio to aviation. Desk AA3



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SINCE 1922 IN RADIO AND ELECTRONICS

Editorial

(Continued from page 1)

tion being that of the proper time. With transports coming off the line at their present rate, surely the time is about here when the temporary "absence" of one plane of each type can be permitted. As a matter of fact, CAA couldn't handle one of each type simultaneously, so they wouldn't all be absent at the same time.

CAA officials are generally agreed that some of the cargo planes now in military service will pass the tests with flying colors. But there's only one way to find out. Let's test them.

The Baruch-George Controversy

NO INDUSTRY has more at stake in the demobilization and reconversion programs proposed in the Baruch report and the report of Sen. George's Senate Postwar Planning Committee than does the aircraft manufacturing industry.

It is generally agreed that the recommendations and procedures proposed in the two reports are substantially in accord, with the exception that Baruch would have the program administered through the means of executive directives, whereas Sen. George calls for legislation which would give Congress a controlling hand.

The hope of the aircraft manufacturing industry to avoid utterly chaotic conditions after the war ends lies in the organization of adequate machinery for the disposition of surplus aircraft, materials and plants and for orderly and sound reconversion to peacetime production geared to commercial needs and markets.

Obviously both the George Committee and Bernard Baruch are striving to effect just such an organization. They seem to differ only on the question of control—whether it should be in the hands of Congress or the Executive.

Cool heads in the aircraft industry are inclined to stay out of the controversy—and we feel that that is, by all means, the course which the industry should follow at the present time. The important thing for the industry is to get the organizational machinery it needs to handle the reconversion problem, which is sure to overshadow all other considerations some time in the future. The precise manner in which it is achieved does not really matter. Let us leave the jurisdictional squabble to the political elements, and keep the industry's hands free to turn to the job of using this machinery when it is set up. There is every possibility that the disputants will reconcile their views, anyway. The end objective is the important thing.

Commendable Action

THE TRUMAN Committee has adopted a policy which, if carried through, can mean much to the aircraft manufacturing industry in getting its side of the story told accurately. The Committee, which is now preparing another aviation report, has sent to the president of each manufacturing company affected, advance galley proofs of the report, with the request that the respective presidents comment on the accuracy and fairness of the material presented as it concerns their own respective products.

This is unusual—and very commendable—action on the part of a Congressional committee. Of course there is always the possibility that the presidents' comments will be ignored, in which case no useful purpose will have been served. But the comments should not be ignored if the committee is after the facts and the truth and wishes to prevent inaccuracies from creeping into the report, as they have into many past Congressional reports.

Allowing the industry to have a look—and considering what it has to say as a result of that look—may answer many objections and help the reports to serve a useful purpose.

Plea for Teamwork

FAY M. THOMAS, vice president and general manager of the Book-Cadillac Hotel in Detroit and one of the best known hotel men to aviation, has written in *Hotel Bulletin* a suggestion that the hotel people should confer with key executives of the various elements of public transportation on postwar problems. This is a good idea. Fay Thomas has long had a keen interest in aviation and inevitably every hotel with which he has been associated has become a magnet for the flying fraternity. The hotel business is closely locked with that of aviation and will continue to be as private flying and scheduled air transport expands. To the traveler a good hotel bed is as much a part of his journey as the transportation itself and there are many ways in which the hotel people can cooperate with the transportation industry. Especially when itinerant flying resumes and increases, hotel services will become more important than ever. We are glad to see one of the leaders of the American Hotel Association take cognizance of the need for cooperation.

Local Interest

THE INTEREST of local communities in supporting applications for new airline services has never been higher than it is at present. In times past, cities were motivated more from the standpoint of civic pride in endeavoring to get airlines to come to their thresholds, but today they are emphasizing the business aspects of air transportation.

It is impossible to publish the extensive briefs filed by various cities, but one sent to us by R. H. Barry, executive vice president of the Chamber of Commerce of Fargo, N. D., caught our attention. Fargo took stock of its transport business and discovered that over 300,000 persons, or about 10 times the population of the city, bought air, rail or bus passenger tickets during 1942 for points outside of its immediate area. Of this total volume the airline had tapped only a little over one per cent. Nothing could more clearly show in a few words the potential field for air transportation than this one illustration.

One crew of American Airlines photographed in Arctic region by Ivan Dmitri

Yesterday 6 Weeks—Today 45 Minutes!

FORTY-FIVE minutes are less than a 1,000th part of six weeks. That shows the change in today's world.

Infinitely less change in transportation developed during past *centuries* than during the last few *years*.

Our Army's Air Transport Command makes thousands and thousands of regular flights, over oceans, arctics and deserts, saving immeasurable time for war passengers and for tons of fighting freight.

The air transport achievements are on such a vast scale and of such significance that they stagger the imagination. They are easier to mentally digest in small doses. A report from New Guinea: a laborious six weeks' trip over mountain and jungle trails by horseback is now easily accomplished in 45 minutes by air, so whole divisions are moved that way. From the Navy: San Francisco to Hawaii in about eleven hours, with 35 persons and 14,000 pounds of vital cargo.

Many deserve the credit—Generals, Admirals, Airlines and Aircraft manufacturers—but especially, we believe, credit is due to the air transport crews in the air and on the ground. Many of these are domestic airline crews, whose companies are playing a major role in global wartime air transport under the direction of our Army and Navy.

They are demonstrating that time and distance have been overcome as barriers to movement in all directions.

The well-being of people always has advanced in ratio as distances lost their handicaps and communications became quicker and easier. The long search for the solution culminates in the transport plane; the airborne are the reborn!

THE NATIONAL AND INTERNATIONAL **AMERICAN AIRLINES** *Inc.* ROUTE OF THE FLAGSHIPS

Letters

Chicago, Ill.

To the Editor:

It is noted with interest that a reopening of the question on the provisional gross weight on Air Carrier operations is current.

It appears that previous testimony as given by the men who fly the airlines is to be discounted and opinions of A.T.C., C.A.A. flight engineers, and persons more interested in dollars than lives are to be given a sympathetic hearing.

With all due respect to the Air Transport Command which is doing a wonderful job in our Air Force, it should be pointed out that its type of operation is recognized as hazardous because of its urgency. Even though persons aboard the Army ships are equipped with parachutes the safety record of their overloaded operations is not impressive. There can be no gambling with public safety.

No doubt the C.A.A. flight engineering department has records to substantiate their claim that a DC3 can handle 26,200 pounds safely. It would be of value to learn under what conditions these tests were made. As airlines must give assured transportation whenever possible they of necessity have to fly in adverse weather. How many of the C.A.A. tests were conducted in thunderstorm or icing conditions? On top of overcast at fourteen or fifteen thousand feet? Airline pilots not infrequently catch all these conditions and more in one divisional trip.

As to the group whose sole purpose is to increase weight for a greater pay load, no one has any patience. They are a bunch of bright young non-flying efficiency experts with an eye to profit alone. It is suspected these boys are the ones putting pressure on the Board for this weight increase. The Board, as long as it is a political football, gives where the most pressure is applied.

Airline pilots do not intend to be dogmatic, but years of experience flying these ships in all conditions of flight have given them a good idea of what load is safe. Our job is our living and we feel that the industry can ill afford to have extra crashes.

The designers of the ship have set a limitation on what the structure can stand. Buckled wing tips and pulled wing bolts indicate that at times even their load specifications are too high. Should the flying public put their faith in the testimony of the airline pilots or army youngsters, occasional C.A.A. test hops and economists?

However, when it has been proved that an average DC3 can handle 26,200 pounds on one motor in all the flying conditions we daily operate in, then the airline pilots will be more than glad to fly them.

ONE OF THE BOYS THAT SITS IN THE NOSE.

●

Portland, Me.

To the Editor:

As a suggestion for the planes of tomorrow, why wouldn't glass-bottom planes, or glass floor panels, be an innovation? This would be a good selling factor on particular flights over different routes.

A. P. C.

●

Oklahoma City, Okla.

To the Editor:

With interest, I read Captain Keil's, CAP, article in the January 1 issue of *American Aviation* regarding the part that Civil Air Patrol will play in the postwar aviation picture.

The comments, observations and suggestions that follow are purely my own and do not represent those of the Oklahoma Wing as the matter has never been discussed officially. Out here in the Sooner state where I am lucky enough to serve as the State Executive Officer, we are so darn busy recruiting cadets for the Army Air Forces that postwar plans are seldom mentioned.

My thoughts at the moment on this matter of postwar CAP:

Anyone that has taken a gander at civilian aviation knows that it has suffered from the lack of a big, powerful national organization. Organization of civilian aviation is as necessary as rain. Organizational backing is the one thing that is always recognized in Washington. Call it pressure, if you like . . . call it anything. Fundamentally, in the right channels, if managed and directed right, national organization of any group is an aid to the government. The cockpit of aviation is in Washington. A strong organization could be of great help and aid to those in Washington, in the cockpit flying the civilian plane.

Aviation does not need any more clubs, social organizations that are built around one man, one petty group for the benefits of a handful of big shots behind the scene, but it DOES need a national organization stressing the little shot "for the good of all." Period.

The blame naturally has to fall to the lot of civilian aviation clans. Before Pearl Harbor the one big happy civilian aviation family was fighting among themselves just like any big happy American family. Joe Doakes and Johnny Dude were fighting among themselves over tiny local problems, both forgetting the big overall picture. Everyone knows what this leads to.

Came the war and the Civil Air Patrol. Petty differences were forgotten. Many of these Joe Doakes and Johnny Dudes enlisted in the Civil Air Patrol. As such, the CAP has been a success due to the forgetting of petty things, due to unselfish leadership. The leaders of the flying-minute-men, by a large majority, have been men with no ax to grind. No jobs to give out except tough assignments on active duty where it takes real ability to do the thankless jobs assigned.

As Lt. Colonel Earle L. Johnson, National Commander of the Civil Air Patrol, has stressed, the thing that makes CAP, is a very fine quality of "spirit". The men and women of the CAP have stuck together due to "spirit" and their unselfish attitude. These two facts are as real and apparent as my wife's new hat.

Take for example our Wing in Oklahoma. Of course, out here in Oklahoma the flying clans take pride in the fact that they never started anything of mutual benefit that they did not make a success of. Example: the recent First National Domestic Aviation Planning Conference at Oklahoma City. Our wing is headed by a big bus driver who owns some bus lines and a ranch. A man who has no axes to grind. Not running for any office now or later. A guy who is purely unselfish in his work with and for the CAP. He is Lt. Colonel Moss Patterson, CAP. His staff is made up of just such men. Unselfish leadership like that is just naturally healthy. It is so throughout the Civil Air Patrol with very few exceptions.

Another thing that has made CAP—and I mention this for a special reason—is the basic thought that when a man is assigned a certain job and he fails to complete said job, without good reason, he is removed. This is sort of ruling with the iron hand. But it gets results and that, in these times especialy, is all we want. You can't hold an organization's interest, where its membership just talk, eat steaks, sit around and do not act. A certain amount of discipline is necessary.

These are basic facts in the CAP now. These can and should be carried over into postwar CAP.

To put CAP in each state under the governor of that state has some good points, but lots of bugs. Such a set-up lends itself to politics. That is what CAP has never had. To ever let the stain of politics, as such, touch the organization would mean a crack-up. You don't mind working your darn head off for nothing, night after night, "for a cause". People would not do this if politics were in the show.

Some think CAP might turn into state organizations after the war—sort of a State National Guard set-up. In some states this would work. In others it would not. We need all 48 states in the show. Not only part of them because it is in active membership where CAP will gain its voice in the postwar era.

For my money, I would like to see CAP continue its "national" set-up. If state financial aid can be obtained without too many strings, fine. But nothing should be allowed to hamper the "overall picture" and national unity by allowing CAP to break up into too many little unruling units.

I think that every CAP member would pay $5.00 a year or so to belong when the duration ends. Should only 50,000 of the organization's present 80,000 go this route it would put in the kitty $250,000 to run a show. Not much money, but it would be a good starter and enough to pay its national head a whopping big salary, which it will take. Such a set-up would give civilian aviation a cracking good voice in Washington. Something it has not had, so far.

Whatever plan is agreed upon you can put this down in your log-book. CAP will live after the duration. Its roots are deeply set. But the organization must remain national in scope and intent . . . for "the overall good".

One more thing. In the days to follow this war, I hope that a big, tall, lanky gentleman and officer by the name of Lt. Colonel Earle L. Johnson will take over the job of heading the show. For our money out here in Oklahoma this Johnson has got it. He's tops. Period.

KEITH KAHLE,
Captain, CAP
State Executive Officer
Oklahoma Wing

Books

MEDICAL ASPECTS OF AVIATION (Speed and Acceleration). By Capt. Ernst Jokl, M.D. Pitman & Sons Ltd., London. Illustrated. 106 pages. $3.00

This is a thorough analysis of the human body's reactions to speed, described by many illustrations and simple language. The psychology of flight, the physical and mental conditions undergone when the body is in a fast moving object, and the curative and preventative procedures to follow in remedying fatigue, lack of oxygen, brain pressure and the like are important points discussed by a medical man who knows his flying.

E. B. H.

●

THE GIRL MECHANIC'S MANUAL. By Daniel J. Brimm, Jr., and Ernst Scheifele. 168 pp. Pitman Publishing Corp., New York-Chicago. $1.75.

The preface of this manual warns the reader: "If you are an expert mechanic, read no further—this book is not for you." Written in an extremely simple and elementary manner, it is for the thousands of girls who would become mechanics. It stresses the accuracy, thoroughness, and efficiency required of mechanics.

●

TRAIL BLAZING IN THE SKIES. By Shafto Dene. 100 pages. Goodyear Tire & Rubber Co., Akron, O.

Goodyear records in this illustrated book its contributions to aerial progress, encompassing the whole span of aviation. The company points to the fact that it is the nation's only prime manufacturer of both complete heavier-than-air and lighter-than-air craft.

●

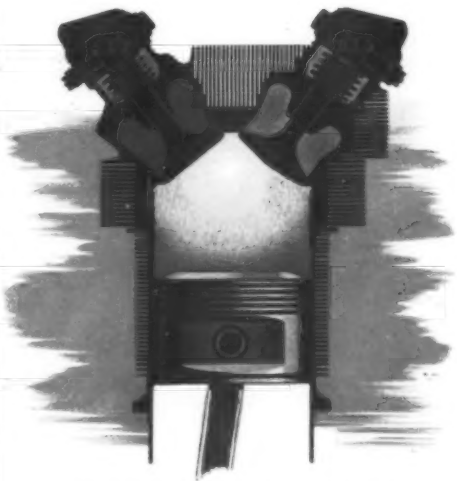
MODERN AIRFIELD PLANNING AND CONCEALMENT, by Maj. Merrill E. DeLonge. Pitman Publishing Co. $4.00. Diagrams and Illustrations. 167 pp.

This volume presents some carefully prepared data on camouflage in modern warfare from the study and experience of Major DeLonge.

(Turn to page 11)

WRIGHT POWERS THE TONNAGE OF THE AIR

Utility or Waste ?



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The problem in engine design is to obtain maximum power at minimum consumption from a fuel without causing detonation. Ample and strategic cooling is important. So is the compression ratio and the degree of supercharging, or mixture pressure at various engine speeds. The mere use of higher octane fuel will not produce more power. The engine must be designed to take the fullest advantage of its better combustion qualities—a continuing research project in the Wright laboratories.

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Books

(Continued from page 10)

pilot and engineer of the Fort Belvoir, Va., Camouflage Section, Army Air Forces. Not only is the material pertinent to combat engineers, but it will be valuable for postwar planning and distribution of airports. Inventions of Civil Aeronautics Administration engineers on safer and surer ways of directing air traffic are explained. E. B. H.

•

MAN IN THE AIR. By Herbert S. Zim. 332 pages. Illustrated. Harcourt, Brave & Co. New York. $3.00.

If you are a pilot, an air passenger or contemplating future air travel and are interested in the reactions of the body under flight conditions, this text book of psychological and physiological effects of flight in both commercial and combat planes gives an exhaustive explanation. Few technical books ever have been written about the human element in flying, and still fewer have told the complete story of the body reaction with scientific explanations based on Army and Navy proven tests.

—E. B. H.

•

AIRCRAFT PRODUCTION STANDARDS, by Stuart Leavell and Stanley Bungay. McGraw-Hill Book Co., New York. 264 pages. $2.00.

This book, written for both the aircraft production student and the experienced aircraft production mechanic, gives special attention to recent advances. The latest materials, their composition, properties, uses, processing and inspection are discussed. Current assembly and installation methods are shown, while the latest changes in AN and AC standard parts, together with popular manufacturers' parts, are included.

•

ENCYCLOPEDIA OF SUBSTITUTES AND SYNTHETICS, edited by Morris D. Schoengold. Philosophical Library Inc., New York. 372 pages. $10.

This encyclopedia covers products which have been recently developed in order to replace critical materials now difficult or impossible to obtain. Discussed are substitutes of interest to all branches of industry. The encyclopedia, claim the publishers, is "the first of its kind in any language."

•

MALTA STORY, by W. L. River. 222 pp. E. P. Dutton & Co., New York. $2.50.

Here is one of the fascinating stories of the war, based on the diary and experiences of Flying Officer Howard M. Coffin, RAF. Coffin, an American born in California, was one of 10 young Americans who enlisted to fight with the Royal Air Force. After training in Canada and England, they were assigned to Malta Island, that tiny pin-point fortress in the Mediterranean which has played such a role in the present war. Lieut. Coffin was one of six out of 200 fighter pilots to survive the Malta seige and the only American of those who went over with him in early 1941 to come out alive. It is a stirring, moving story that Mr. River has put together out of Lieut. Coffin's experiences. It is one of those stories which will interest every airman. It is recommended for your reading.

•

A START IN METEOROLOGY, by Armand N. Spitz. Norman W. Henley Publishing Co., 17 West 45th St., New York. 93 pages. $1.50.

This book is intended for the beginner in meteorology, and serves its purpose in an excellent manner. It is easy to read, and well illustrated with sketches by the author.

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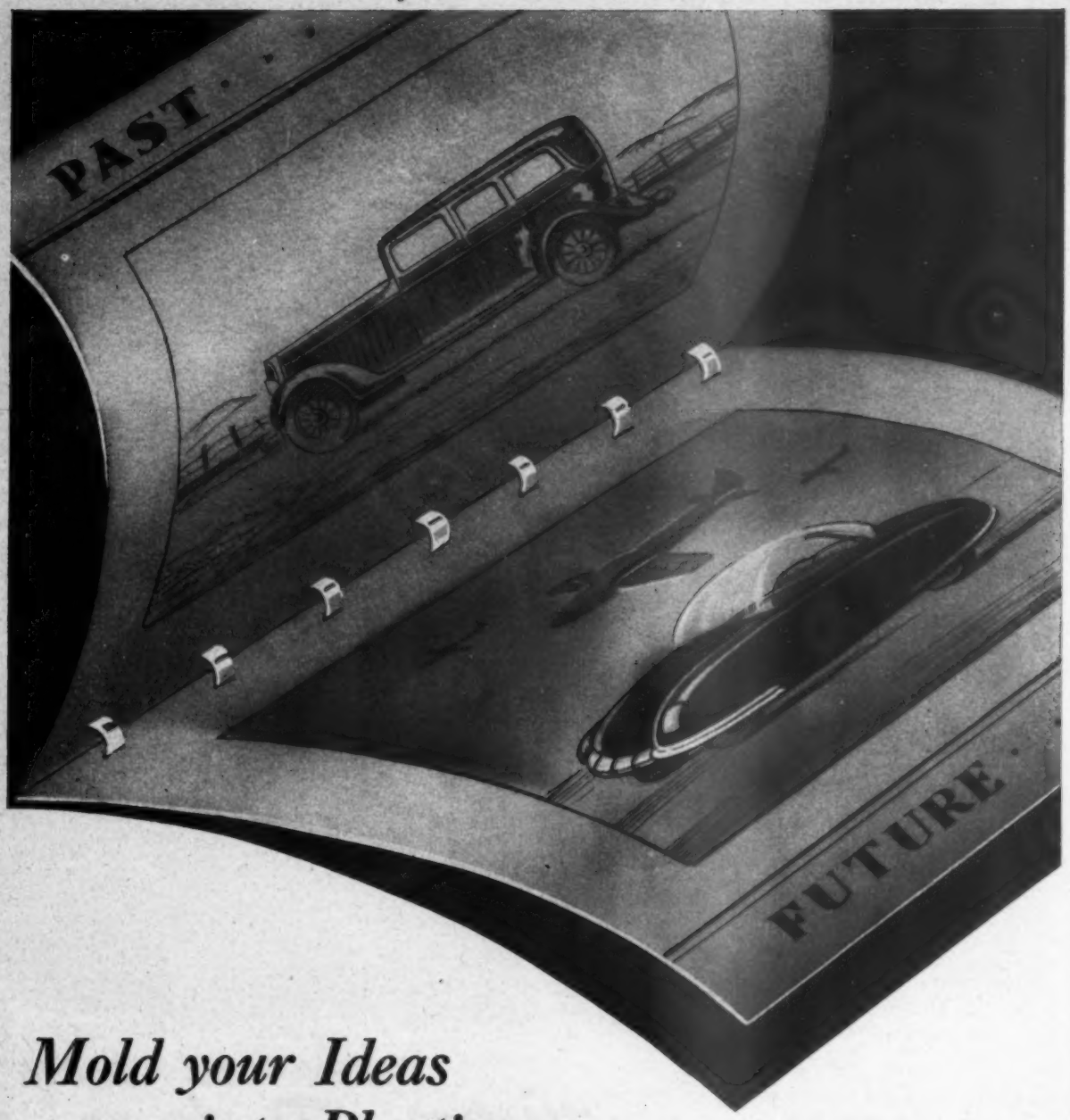

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Mar. 1, 1944

American Aviation

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This Issue

3 Senators Start Drafting Postwar Plans

Bailey, Clark, Brewster Are Working Out Basic Policies for Air Transport

By KATHERINE E. JOHNSEN

THREE SENATE COMMERCE Committeemen, keyed to aviation's problems through having heard testimony from top industry and Government officials during the past eight months, started drawing up recommendations on basic policies for postwar domestic and foreign air transportation last fortnight.

The report will be turned over to the Executive branch of the Government—probably the President and Secretary of State, *American Aviation* was told.

The Senators are:

Josiah Bailey (D., N.C.), chairman of the Senate Commerce Committee and a member of its aviation subcommittee, who is believed to strongly favor a "chosen instrument" as the solution to postwar U. S. commercial aviation superiority;

Bennett Champ Clark (D., Mo.), chairman of the aviation subcommittee of Senate Commerce Committee, who is expected to offer formidable opposition to encroachment of the air transport field by shipping firms;

Owen Brewster (R., Me.), member of the aviation subcommittee of Senate Commerce Committee and one of the five widely-publicized "globe-trotting" Senators who is expected to continue a determined drive to obtain commercial rights for U. S. planes to foreign bases built during the war with U. S. taxpayers' monies.

This sub-subcommittee was formed at the suggestion of Bailey and members were appointed by Clark, it was reported.

The three Senators plan to complete their report "in about two weeks". It will probably be passed on by the aviation subcommittee and then by the full Commerce Committee before being submitted to the Executive branch.

The report will act as a guidepost to the Executive branch, so that international negotiations will follow a pattern generally acceptable to the Senate which holds veto powers over treaties.

In addition to recommendations on foreign aviation, the report will also include recommendations on major domestic aviation issues, such as surface carrier entrance to the air carrier field, *American Aviation* was informed.

Following completion of the report, the aviation subcommittee of Commerce Committee, according to present plans will hold open sessions. Prior to this, however, representatives of American Export Airlines, TWA, and PAA, and Admiral Emory S. Land, chairman of the Maritime Commission, are slated to be heard from in executive session.

The Executive and Legislative branches of the Government plan to work out the problems of postwar aviation "hand in hand", it was emphasized to *American Aviation*. The report of the three-man subcommittee is an important, but only a "preliminary" step by the Legislative branch, and international negotiations, preceding the peace treaty, will also be important but only "preliminary" steps to the final solution of postwar aviation policy, it was stated. This close cooperation is essential, it was pointed out, in view of the scattered jurisdiction of various aspects of postwar aviation which should be formulated to fit coherently into an over-all pattern. The Civil Aeronautics Board it was said, is in close touch with members of the aviation subcommittee of Commerce Committee, who are expected to wield considerable influence on the Board's route decisions.

The following facts on jurisdiction over the main aspects of postwar aviation were outlined for *American Aviation:*

• The decision on "airline" policy comes within the jurisdiction of the Senate Commerce Committee, since this is a "domestic" aviation issue. The question of merchant marine participation in air transportation also falls within the jurisdiction of Senate Commerce Committee.

• Matters of international "air policy" will be negotiated by the Executive branch. A permanent agreement on these matters will take the form of a treaty, subject to the approval by the Senate. Senate committee jurisdiction over treaties lies with the Foreign Relations Committee, headed by Sen. Tom Connally (D., Tex.)

• Questions involving the entrance of domestic surface carriers—railroads, buses, trucks—to the air transportation field are under the jurisdiction of Interstate Commerce Committee, headed by Sen. Burton K. Wheeler (D., Mont.).

(It might be noted that Wheeler has been a staunch opponent to common ownership and control of two different forms of domestic transportation).

Because of this scattered jurisdiction over postwar aviation, Senate Commerce Committeemen have indicated that they will propose the formation of a joint Senate group, to be comprised of three members of Commerce Committee, three from Foreign Relations, and three from Interstate Commerce. Formation of this group, it was said, will probably be suggested at about the time that Commerce Committee is ready to launch open hearings on postwar aviation.

Commerce Committee spokesmen said that the provisions contained in comprehensive legislation *(American Aviation,* February 15) which has been framed by Sen. Pat McCarran (D., Nev.) will be "considered". Introduction of the bill has been delayed by McCarran's absence from Washington, but it was reported that it will be introduced upon his return the first week of March. Commerce Committeemen indicated, however, that no attempt would be made to "enact" legislation at an early date.

It was reported to *American Aviation* that the President has notified Senators that he does not favor the enactment of any aviation legislation at this time, whether directed at the domestic or the foreign field. This notice, it was clarified, was not the letter sent to Rep. Clarence F. Lea (D., Calif.), chairman of the House Interstate and Foreign Commerce Committee, which opposed only the Lea bill's provision separating the Civil Aeronautics Authority from the Commerce Department. *(American Aviation,* July 15).

Other points made to *American Avia-*

(Turn to page 40)

International Airline Meeting to be Held in London March 28

An international airline meeting is scheduled for March 28 in London, Wayne W. Parrish, editor of *American Aviation* cables. Formal invitations have been mailed to 80 present and potential international airlines, including all American lines, to attend.

Parrish, who has been in England during the past month at the invitation of Sir Stafford Cripps, Minister of Aircraft Production, advises that the meeting which will be informal, will consider definite steps which might be taken in the interests of international air transportation. At the same time, the conference will seek to develop ideas that will be useful to the various governments in arriving at cooperative air policies.

The invitations were sent out by J. E. D. Shaw, vice-chairman of North Eastern Airways, an independent British airline, and Fred Jacques, managing director. The organizers are acting independently of the British and other governments, but with the full knowledge of the British Air Ministry.

Since all of the prewar European airlines have representatives in London, the attempt to bring the International Association under United Nations control, or establish a new group in which British and American airlines would occupy dominant positions, is considered a significant step at this time.

Baruch Condemns 'Government in Aviation'

Speaks Mind on Government in Airlines, Communications as Well as Plants

THE PRESERVATION of free enterprise without government competition or subsidy was urged by Bernard M. Baruch in his report to the President on "War and Postwar Adjustment."

"There should be no government operation of aircraft plants in competition with private industry," he said, "and the government should not own international airlines and communications either."

Stating that existing machinery for disposal of surplus property is inadequate to handle the immediate problems, the Baruch report recommends the establishment of a Surplus Property Administrator in the Office of War Mobilization "with full responsibility and adequate authority for dealing with all the many aspects of war surpluses."

Since "proper handling of surpluses will be a most significant factor in preventing inflation, speeding reconversion and avoiding serious unemployment," the Administrator should begin immediately not only to establish disposition policies but to actually order the immediate sale of materials and facilities as they become surplus, Baruch recommended. Some surplus facilities, he warned cannot be handled singly as they become available, but will require a broad national policy.

"There is one group of newly-built war plants, such as those for aircraft, aluminum, magnesium and synthetic rubber," the report states, "where special considerations are all-important. These are industries where the Government investments are so huge that the disposition of Government-owned facilities could decide the fate of the entire industry; or where questions of military security are paramount; or which may be part of the settlement of the peace. Sales in these fields will not involve a matter of selling so many single plants but require the formulation of public policy on an industry-wide basis."

It was pointed out that of the Government's wartime investment of $15,500,000,000 in war plants and machinery, slightly less than $3,000,000,000 is in plants which could be converted to peacetime production only after some physical alterations and changes. This includes airplane, aircraft engine, tank, munitions and assembly plants. "Some of these plants are likely to be kept as stand-by reserves; others will be needed for use in storage and ware housing."

The report recommends that disposal agencies be allowed to lease as well as sell surpluses, to exchange properties, to sell on credit—but never to permit leasing to become a hidden device for Government ownership or subsidies.

The Surplus Administrator will be aided by a Board composed of representatives of the following agencies: War, Navy, Treasury, Reconstruction Finance Corp., Maritime Commission, War Production Board, Bureau of the Budget, War Food Administrator, Attorney General, Federal Works Agency State Department and Foreign Economic Administration.

Actual disposal will be handled in the main by four major outlets: consumer goods by the Treasury Procurement Division; capital and producer goods to a single corporation within the Reconstruction Finance Corp.; ships and maritime property to Maritime Commission; food to War Food Administrator.

"Our own suggestions as to broad policies that the Surplus Administrator may wish to follow," states the report, are summed up in ten basic principles:

1. Sell as much as he can as early as he can without unduly disrupting normal trade;
2. Listen to pressure groups but act in the national interest;
3. No sales, no rentals to speculators: none to promoters;
4. Get fair market prices for the values with proceeds of all sales going to reduce the national debt;
5. Sell as in a goldfish bowl, with records always open to public inspection;
6. As far as practicable, use the regular channels of trade that private business would in disposing of the particular properties;
7. No Government operation of surplus war plants in competition with private industry;
8. No monopoly; equal access to surpluses for all businesses; preference to local ownership, but no subsidizing of one part of the country against another;
9. Scrap what must be scrapped but no deliberate destruction of useful property;
10. Before selling surplus equipment abroad, assure America's own productive efficiency on which our high wages and high living standards rest.

The disposal agencies were further urged to make effective use of Industry Advisory Committees. The Army and Navy should be asked to examine their in-

(Turn to page 45)

Industry Praises George Report On Postwar Economic Planning

THE AIRCRAFT INDUSTRY, which has long urged the establishment of a single overall agency to direct the demobilization of war industries and the rapid conversion to peacetime production, has praised the report of Senator George's Special Committee on Postwar Economic Policy and Planning.

"It's too good to be true," one industry spokesman said, and expressed the belief that a major portion of the report would be incorporated into law. He pointed out that there will be two important pressures for the passage of this legislation since it guarantees the retention of private enterprise and seeks full employment.

The Office of Demobilization proposed by Senator George (D., Ga.) was endorsed by Ernest R. Breech, president of Bendix Aviation Corp. as essential to the successful conversion to peacetime operations. The proposed office would be headed by a Director appointed by the President and confirmed by the Senate. Deputy directors would supervise units dealing with contract cancelation, plant reconversion, disposal of surplus property and "such other units as may be necessary."

Spokesmen of the Postwar Planning Committee pointed out that the report recommends legislation which would return to Congress some of the authority loaned to the Executive under the War Powers Acts. The projected Demobilization Office would have an advisory Board including three Representatives and three Senators and would be required to submit monthly reports to Congress on general policy decisions and quarterly reports on all actions. Although the Office will be an independent agency for the duration it would be a part of the Office of War Mobilization.

"It should not be an operating agency," the report states, "as all the evidence before this committee indicates that the actual carrying out of plans can best be handled by agencies already established, under the overall policies laid down by the Office of Demobilization. It should, however, have the power to set up its own administrative machinery in case . . . the existing agency fails to follow its direction . . . Its power to issue orders to other agencies of the Government with reference to industrial reconversion plans and policies is absolute."

Besides recommending the establishment of a demobilization policy office, the report outlines the basic program for handling surplus facilities, advance payments, cancelled contracts, inventories and review procedures. "We will probably bring out the legislation piecemeal because each section will have to go into a different standing committee. We will try to fit the individual bills as titles into one overall bill," Senator George explained.

The first of these individual titles is the Contract Termination Bill (S-1718) recently introduced by Senator Murray (D. Mont.) and Senator George. A subcommittee of Military Affairs, headed by Murray has already held extensive hearings on contract termination and rapid action on the bill is therefore expected.

The Murray-George Bill establishes an Office of Contract Termination Settlement

(Turn to page 42)

Pogue Sees 15,000 Transports in Use by '45

Airlines Will Absorb Only Small Fraction of Surplus After War, He Warns

PREDICTING that 15,000 transports will be in service throughout the world by the end of 1944 and increasingly larger numbers with each additional year of war, CAB Chairman L. Welch Pogue, recently unfolded to the Senate's Postwar Planning Committee the vastness of the problem of postwar disposition of surplus planes and the import to both the manufacturing and transport branches of aviation.

It can be estimated that 2,000 transports will be sufficient to meet the needs of airlines in the postwar period, if we calculate that airline mileage—domestic and international—will be four times the prewar mileage, Pogue said.

Upon this "not unreasonably conservative estimate," Pague declared, "it is apparent that the United States domestic and international air carriers will be able to absorb only a very small fraction of the surplus transport aircraft which will be on hand when the war ends."

Reporting that the CAB has requested the views of the aviation industry, Government officials, and other interested parties on the problem, Pogue recommended to the Committee that government machinery be established now to study the matter and be prepared at the war's end to conduct disposition of surplus craft in a manner which will not disrupt national economy.

Discusses Transports Only

Although confining his testimony to the disposition of excess transports, Pogue pointed out to the Committee that, in addition, bombers and small aircraft now in use in courier service and training constitute a problem of disposition in the postwar commercial market.

The ultimate solution of the problem cannot be determined now, because of the many uncertainties which exist, Pogue said. He emphasized the need for planning, though, and warned that "if there is no planning and the surplus aircraft on hand at the end of this war are simply peddled to the highest bidder, we may be reasonably sure of the following consequences:

"1. A vast and costly defense reserve will have been wasted.

"2. The transport aircraft market will be glutted for years to come.

"3. International prestige will be lost through the use of our international carriers of obsolete equipment.

"4. The capacity to manufacture and develop transport aircraft will suffer a blow from which it will take years to recover.

"5. The economic soundness, efficiency, and safety of the national and international air transport system of this country will be adversely affected during a time when it should be making progress with wide-open throttle."

Pogue reviewed for the Committee several alternatives for postwar plane disposition which have been suggested to the Board and considered by it:

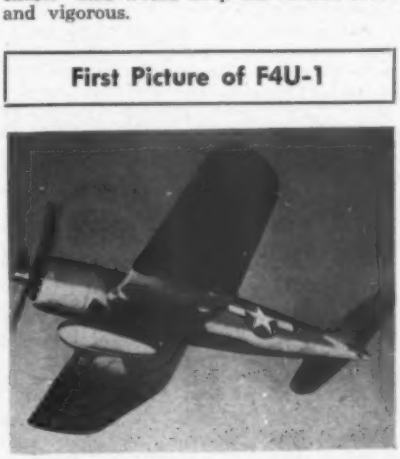
One difficulty in disposing of a portion of the surplus aircraft to our air carriers arises from the fact that the surplus equipment may be obsolete when the air carriers receive it. As a solution to this difficulty, suggestions have been made that in lieu of selling the equipment to air carriers it be leased to them on reasonable terms so that they could terminate the lease when new and more modern equipment became available. This method of disposition would have the advantage of removing any premium which might exist upon the retention and operation of obsolete equipment until it had been operated for a long enough period to be fully depreciated.

"Dumping" Aircraft on the Foreign Market

The proposal to "dump" surplus planes on the foreign market indiscriminately at whatever price they will bring raises serious objections. Some nations will have an adequate supply of transport aircraft to meet their needs; others will not. Where adequate supplies are available the dumping of our surplus would undoubtedly be met by vigorous protests and the establishment of tariff barriers which would plague our manufacturing industry for years to come. Indiscriminate disposition of our surplus abroad might result in action directly contrary to our international aviation policy.

Furthermore, our own good reputation as the vendors of efficient aircraft might be protected better by some kind of program which will make postwar surplus craft available to meet the temporary requirements pending the time when more efficient aircraft become available for purchase. This would keep the market fresh and vigorous.

First Picture of F4U-1



This is the first picture released of the Chance Vought F4U-1 Corsair Navy fighter with its new droppable fuel tank. U. S. Marine Corps pilots in the Solomons have used this long-range plane to run up a spectacular fighter plane record.

"Scrapping" aircraft in excess of the needs of our domestic and foreign carriers would have the advantage of cleaning up the situation so that the available market would be preserved. It would have the obvious disadvantage of liquidating a very large and costly fleet of transport aircraft which might serve for a while as a valuable war reserve to an instrument in the maintenance of peace in the postwar years or for experimental operation which would not otherwise be possible because of high costs.

A portion of our aircraft will be scrapped in any event. The war's close will find many air transports located at remote fields throughout the world. Overnight the standards by which aircraft are valued will undergo radical revision. No longer will many of these planes meet peacetime tests of airworthiness. The cost of reconditioning, and possibly rebuilding plus the flight or shipment cost to a home base will have to be carefully measured against the plane's value at the home base on a market already surfeited with similar equipment. No doubt, a careful on-location survey of our war air transport aircraft, in the light of various considerations of cost and value, should be undertaken as a first step in any postwar air transport arrangement or plan, in order to determine what equipment is not worth reconditioning or salvaging. However, we can be sure that the number of aircraft we are fully justified in scrapping will not begin to solve the problem of surplus aircraft. The bulk will remain to be disposed of.

Return to Manufacturers

Several versions of a plan to return surplus air transports to the manufacturing concern which produced them, permitting the manufacturer to convert the aircraft to commercial usage and resell under appropriate rules and regulations, have been suggested.

First, that surplus aircraft and equipment might be offered to the airlines at a reduced price through the manufacturer on condition that new equipment be purchased from the manufacturer at the same time, perhaps on a plane-to-plane basis. This plan would reduce the manufacturer's commercial market substantially, the actual amount depending upon the sales price of released equipment.

Second, that the same basic agreement including a dollar-for-dollar ratio of purchase might be made. Under such a plan the effect on the market for new planes would depend largely upon the mark-down on the released equipment.

Third, that whether or not a requirement were to be imposed that new planes be purchased, the sale of the surplus equipment should be made only through the manufacturer, who would thus be able to recondition the aircraft and to make certain that they were in proper condition to support the reputation of American industry.

Under any of the versions, the development and sales of new equipment would be severely limited for some time to a few types not produced in quantity during

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Airport Managers, Airlines Discuss Major Problems

Both Sides Present Cases at Successful Ft. Wayne Meeting

By ERIC BRAMLEY

RECOGNITION by the airlines of the problems facing airport management, and recognition of the airlines' problems by the airport managers highlighted the Airport Managers Meeting at Fort Wayne, Ind., on Feb. 18-19.

The meeting, which started out to be a small, Midwest affair, ended up attracting over 150 airport managers, airline executives, Civil Aeronautics Administration officials, oil company representatives, fixed base operators, manufacturers, city officials and other interested parties. Some came from as far as California and New York. Bob Schott, manager of Smith Field, Fort Wayne's municipal airport, originated the idea for the meeting and served as general chairman.

The meeting did not result in the adoption of resolutions or the formation of a definite program to be followed in solving airport problems, but all parties agreed that this was not necessary. The success of the conference came rather from the frank discussions of problems facing the different groups in attendance. Each group, it was felt, came away with a better understanding of the others' problems. Although discussions were frank and to the point, there were none of the controversies that have marked other aviation meetings.

Some of the more important points made by speakers included:

- Airports must be self-sustaining.
- Airlines must pay their fair share of airport expenses.
- From the airlines' point of view, a schedule "activity fee" is the best method of payment for use of airport facilities, such as runways, ramps, tower, etc.
- Rates paid by the airlines at airports must be decided on a "sound and economic" basis—not "picked out of the air" as they have been many times in the past.
- Taxpayers are willing to have bonds issued to help finance airport construction, but they are unwilling to pay taxes to make up continual yearly operating deficits.

The problems facing fixed base operators and private flyers did not receive as much attention at the meeting as those of the airport managers and the airlines. One talk, scheduled to be given by Col. Roscoe Turner, president of Roscoe Turner Aeronautical Corp. and president of National Aviation Trades Association, was canceled due to Col. Turner's illness.

Louis R. Inwood, executive assistant, TWA, told the meeting that "the airlines and all other aeronautical and non-aeronautical activities should assume a fair and just proportion of the cost of the overall facilities (of airports) consistent with the use which is made of those facilities. The community must plan and survey the facilities to be furnished, and the uses to which they will be put, and fairly allocate to the taxpayers and to the users the costs and expenses of their airport community center.

Need Specific Agreements

"Having determined that fair allocation, it must then develop specific agreements with the various interests utilizing the airport. There must be developed therefrom the needed revenues to properly liquidate costs and expenses. In the case of the airlines an agreement which in general follows the pattern of existing airport agreements . . . is still the most satisfactory contractual document, and represents the most satisfactory method of covering the institutional relationship between the community and its air carriers."

The activity fee, Inwood asserted, is "the proper yardstick for assessing airport charges. The general use of the airport flying facilities and the supplementary rights and uses will all be compensated for by the activity fee. In addition the airline will require the exclusive use of specific space in terminal buildings, hangars, other airport buildings, shops, storage sheds and their own fueling facilities. This part of the airport agreement presents no difficulty as it is this portion of the contract which is truly a lease and may be properly described as such. Whatever ground space or building space the airline requires it will pay for upon going rates of rental in the community, and will thereby assume its proper and appropriate portion of the costs of those facilities utilized."

Activity fees, Inwood said, should be based upon a fixed payment for each monthly schedule operated. "Moreover, that payment should be a graduated scale with perhaps two or three classifications, that is, the first few schedules should be paid for at a higher monthly rate per schedule than the next few. Then all schedules thereafter should be at a minimum base fee. This fee should, moreover, be scaled with the weight of the aircraft operated."

Oppose Oil Monopoly

Oil companies should not be granted exclusive contracts for the sale of gasoline and oil at airports, P. E. Bermingham, of Socony-Vacuum Oil Co., New York, told the Airport Managers Meeting at Fort Wayne, Ind., on Feb. 19.

Bermingham asserted that his company was "unalterably opposed" to the granting of such contracts. Future airports will be big enough to allow the "full play of competition," he said, urging "free and open competition at every airport in the country."

Dudley Steele, manager of Lockheed Air Terminal, Burbank, Calif., one of the nation's most successful airports, also went on record as opposing gas and oil monopolies on airports.

Oppose Gas Tax

The airlines have made it "abundantly clear" that they cannot agree to the imposition of a gasoline tax or toll as the basis for producing airport revenues, Louis R. Inwood, executive assistant, TWA, told the Airport Managers Meeting at Fort Wayne, Ind.

"There are so many arguments against the use of the gasoline toll that it hardly seems necessary to repeat them. First, that the amount of gasoline loaded or consumed by an operator at any given airport is no true measure of that operator's use of the airport. For example, assume that Airline X departs from city A for a point 100 miles distant. Airline Y departs from city A for a point 400 miles distant. Airline Y will require roughly four times as much gasoline as Airline X. Airline Y consequently pays four times as much for his use of the airport, which use is exactly equal to that of Airline X. Some airports will profit at the expense of others, which clearly demonstrates that this method is not equitable for either airport or airline.

"Second, the airline tax and toll method is usually advocated by the same person who is advocating exclusive gasoline arrangements for a concessionnaire. When you start telling an airline what gas he shall use in his airplane, and who shall fuel the ship, you are on dangerous ground. The airport is attempting to assume the responsibility for airline safety."

Leases, he added, should not be for a short period of time. "Ideally, if the community and the airline can settle their relationship for a period of 20 years or more, it should be extremely beneficial to both."

Robert Averill, assistant to the president of Pennsylvania-Central Airlines, told the meeting that airports should be self supporting, but that airports, as a public facility, should not be operated to make money. Airport funds, he said, should be kept separate from other city funds, and the airport should be run as a separate business.

Airport rentals, Averill explained, constitute one of the airlines' largest indirect operating expenses. The airlines' fees at airports, he urged, must be decided on "sound and economic" principles—not "picked out of the air," as they have been in the past. Many negotiations, he added, have been "purely a matter of horse-trading."

Almost every time fees are renegotiated, the airlines pay higher prices, Averill said, adding, however, that he did not mean that costs were necessarily too high, but that the airlines must know what their costs are. Airport rentals, he admitted, have been "ridiculously low" in many cases.

The activity fee, he said, is the "most fair and practical method" of charging the airlines. A gasoline gallonage method is unsound, and any fee based on passengers originated per thousand of population is likewise unsound, he added.

E. J. Foley, assistant to the vice-presi-

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Aero Chamber Committees Pushing Postwar Planning

By CLIFFORD GUEST

THE Aeronautical Chamber of Commerce, around which a new set of reorganization plans is revolving with indications that agreement may be announced soon on the basic question of personnel, inaugurated during the past fortnight an unusually active program aimed for the most part at preparing for the postwar needs of the aviation industry.

The Chamber's several departments and committees have taken hold of the problems assigned to them, and in a series of meetings reported progress on important policy-making-fronts.

Among the outstanding actions was the submission to the Civil Aeronautics Administration and the Civil Aeronautics Board last week of a set of recommendations for the simplification of the current civil aircraft type approval system.

Reflecting crystallization of industry opinion regarding the type and extent of regulation indicated to encourage continued aeronautical design progress on a sound basis, the recommendations were prepared by the Chamber's Airplane Technical Committee comprising chief engineers and top technical executives of the industry working under the Technical Department which is headed by E. W. Norris.

The newly organized Research and Statistics Department also launched a program designed to make the Aero Chamber the focal point for all statistics, within security limits, affecting the industry. Representatives of Government and private agencies interested in the coordination of statistical information attended a three-day series of meetings at which a cooperative program was agreed upon.

A. T. Hapke, Jr., chairman of the Chamber's Statistical Committee and manager of market research for Republic Aviation Corp., heads up this activity. E. Earl Lothrop, recently appointed manager of the new Research and Statistics Department and former market analyst with Sperry Gyroscope Co., outlined plans for the department's work. A symposium was conducted at the sessions by Irving H. Taylor, chairman of the Economic Development Committee of the Chamber and east coast representative of Douglas Aircraft.

Organization of an Airworthiness Requirements Committee of the Chamber was completed last week as a result of conferences held earlier in the month between chief engineers and technical executives of the manufacturing industry.

The new committee is headed by W. E. Beall, vice-president of engineering of Boeing Aircraft Co., and its object is to have an active technical group representing the aircraft manufacturers to continually review all U. S. airworthiness requirements for suitability.

The committee will: (1) coordinate airworthiness problems with both company technical specialists and engineering management; (2) initiate studies and experimental tests when deemed advisable, or when requested by the government, in developing proposed new requirements or revisions to current requirements; (3) to provide the aeronautical agencies of the government with a single industry contact on airworthiness problems; (4) to assert the interests of the aircraft manufacturers regarding agreements that may be made by our government on uniform international requirements; (5) to promote Army-Navy-Civil standardization of design criteria, and, as a result of these, to prepare and submit to the interested government agencies, recommendations for improvement of airworthiness requirements.

Plans for supplying statistical information on airfield type landing facilities as a guide to communities in making plans for postwar private flying installations were advanced during the fortnight at a meeting of the Personal Aircraft Committee of the Chamber. Preliminary details were outlined by William A. Mara of the Stinson Division of Consolidated Vultee, vice chairman of the Committee. The Committee also reported progress being made in plans for simplification of Civil Air Regulations in view of flying characteristics of postwar private aircraft.

The Personal Aircraft group went on record as opposed to air shows of private flying aeronautical equipment at the present time.

Representatives of the Chamber and National Aeronautic Association announced jointly they have offered to the Office of Price Administration the cooperation of their memberships in an OPA move to discourage unnecessary flying as a gasoline conservation measure. A campaign is planned to discourage all strictly pleasure flying, but not flying for the maintenance of hours or building up of hours for improved pilot ratings.

New military aircraft engine procurement requirements were discussed at the annual meeting of the Engine Technical Committee of the Chamber with representatives of the Army and Navy held in New York Feb. 17 and 18. J. H. Sidebottom of the Technical Department presided.

The Export and Surplus Aircraft subcommittees of the Chamber's Economic Development Committee met in New York Feb. 16 to discuss continuing studies of postwar problems.

Highlights of the Airplane Technical Committee's recommendations on simplification include:

1. Establishment of an "Airworthiness Requirements Committee" to assist in the development of efficient design standards for personal, for airline, and for military aircraft. This committee will consist of designated representatives from each company, appointed by and responsible to engineering management. Its members will study airworthiness requirements, coordinate technical details with company specialists, and make official recommendations to the government through the Aeronautical Chamber of Commerce.

2. Simplification of government approval of airplane designs, with separate treatment for air-carrier and non air-carrier types.

3. Endorsement of U. S. participation in discussion with foreign countries leading to the establishment of uniform, basic safety standards for aircraft. In this connection, it will be recommended that U. S. airworthiness standards be translated into Spanish and Portuguese and transmitted by the CAB to aeronautical agencies of all Latin American countries.

4. That the CAA give full consideration to the data obtained from the excellent war-service records of commercial airlines, the Air Transport Command and other service branches as a basis for granting airworthiness certificates to those models which may be of commercial value.

5. That current military operations of aircraft are providing the "greatest aeronautical research laboratory in the history of the world" and should be used as a basis for suitable revision of the airworthiness requirements leading to improvement in the efficiency of both civil and military aircraft.

Prominent in Aero Chamber

This group is guiding the development of the new Research and Statistical Department of the Aeronautical Chamber of Commerce. Photographed at a recent luncheon meeting in Washington's Statler Hotel, they are, left to right: E. E. Lothrop, manager of the department; A. T. Hapke, Jr., chairman of the chamber's statistical committee and manager of market research for Republic Aviation Corp.; James P. Murray, president of the chamber and vice president of Boeing Aircraft Co.; and Irving H. Taylor, chairman of the chamber's economic committee and East Coast representative of Douglas Aircraft Co.

Change in Canadian Govt. Could Affect Air Policies

Anti-American Trend May Develop in Next Decade, Writer Says

By AUSTIN F. CROSS

(Special Canadian Correspondent, and author of "The People's Mouths")

OTTAWA, CANADA—What amounts to an anti-Americanism lurks latently among some of the imperialists here in Canada, as far as postwar aviation is concerned, and American airplane leaders would do well to handle this situation tactfully.

Here seems to be the picture: the present government is just as friendly as it can be to Americans and American government policy. But this government may not be in power forever. Just as Republicans in the States do not see eye to eye with President Roosevelt, so is there a strong and influential party here anxious to preserve the British tie, to keep American influence at a minimum. This is not because they love Uncle Sam less, but rather, John Bull more.

'We'll Wait and See'

It will be recalled that this present government came home from the London air conference, leaving some rather disconcerted British air officials behind, since Canada refused to get on the dotted line with any "All-Red" route. Canada decided that an All-Red route ultimately meant a negation of the Good Neighbor policy. We were not turning the British down exactly, but we were telling them we'd wait and see. At the same time, we whispered across the international fence to Uncle Sam: "You've nothing to worry about."

But there are some people here in Canada who want things British all the way. That is their right, and no one would argue with their Empire-mindedness. Col. George Drew, Premier of the populous and influential province of Ontario, is one of these. The brilliant and impressive Drew never fails to preach the gospel of Empire. Now, since there is every chance that he might be the next Progressive Conservative leader, some eight or ten years from now, perhaps, and since possibly by then the people may be turning to that party, this man may have a lot to say about air policy along in 1952 some place, or maybe 1954. Drew, not yet 50, has many fruitful political years ahead of him.

Now he is just back from Britain again, keen as ever about the Empire tie. Last May, he put himself on the record regarding postwar air planning, by saying, in Ottawa: "A nation of 12,000,000 people cannot maintain the domestic air routes on a large enough scale to support the material and personnel for air routes."

Then he went on to say: "We stand to benefit most of all if we are part of an integrated empire system girdling the world."

Hon. Mr. Drew, just back from England, feels that way more than ever.

In the back of his mind is the fact that Britain can do anything the United States can do, in the way of production and performance. He indicated that if Canada were in the market for a plane, why not buy it in Britain rather than in the United States.

This point need not be labored, but the fact is that Col. Drew "Sells British" wherever he gets a chance. And he gets a chance pretty often.

But the thing also bobs up in another way. Gordon Graydon, House Leader of the official opposition, the Progressive-Conservative party, has asked the following questions of the government:

1. To what extent are we collaborating with the United Kingdom on postwar aviation?

2. How far have negotiations proceeded with the United States?

3. How is the superior knowledge and experience of our trained people to be utilized to the greatest advantage and what benefits are we to reap from our favored position as the most economical trade route between industrial centres in the United States and markets of Europe and Asia?

But these are just shots for target practice. These might also be called tracer bullets. The real battle has not yet begun.

Actually, quite a debate is expected about air, and it may well be in full blast in the Canadian House before these words are read in print. But there are some tempering considerations.

The first thing to remember is that the actual head of the Progressive-Conservative party is John Bracken. Now for 20 years, John Bracken was the Liberal-Progressive prime minister of Manitoba. Therefore, if there are any lingering remnants of Liberalism in him, he will not be the die-hard imperialist that Col. Drew is, nor will he reflect the viewpoint imperially of Tory Toronto. Again, Bracken knows the west as no one else does, and indeed was made leader of the party, with his own provisos, just so he could carry the west. No one else within the party could, it was felt.

Now on the prairie, they turn their eyes as much to the States as to Canada. They carry on a perpetual vendetta against "The East" and stigmatize it as a den of capitalists and interest gougers. They look with interest, often enthusiasm, across the prairie, from whence comes their cheap machinery, and from whence it would come cheaper, if there were lower tariffs. In a word, they don't go for this imperialist stuff. They will fight for Britain, but you can't sell them imperialism wholesale. They can't see why a thing is good just because it is British, bad just because it is American. Yet that is often the creed of jingoistic extremists in Canada, notably in Ontario of which Mr. Drew is Premier.

Prairie Vote Important

The payoff then is that the western wing of the Progressive Conservative party would not go for any policy of swallowing everything British. In the long run, the All-Red route, and the all-British co-operation would not be acceptable to our prairie voters.

But if the Progressive Conservatives did get in power at Ottawa, they could give American interests some pretty anxious moments. They could switch orders from the States to Britain, they could make new English affiliations. It is always well for American manufacturers and American postwar planners to have these remote contingencies in the backs of their minds.

There is one final angle. Canada is against an All-Red route now. But if the Canadian Pacific got a transatlantic air franchise, then picked up one on the Pacific, they would be in a position, like their ships, to fly an All-Red route. Lacking only would be the indispensable link—the air across Canada.

Traditionally the Conservative party has always favored the Canadian Pacific, just as the Liberals have favored the publicly owned Canadian National, whose air-baby is Trans-Canada Air Lines. Therefore, if they got in, you could be pretty sure they would give the Canadian Pacific Airlines what they wanted. The people would hardly fight that proposition very vigorously, since the C. P. R. has engendered a very healthy respect all across Canada.

Then there would be another kind of All-Red route, which in a sense would be all-Canadian. That would be a horse of another color.

Meanwhile, some of the biggest air battles of this war will not only be fought over the theaters of war, but over the floor of Ottawa's House of Commons this winter. The stakes are tremendous.

Gen. Arnold at Wichita

Gen. H. H. Arnold (center), commanding general of the AAF, inspects production of the Boeing Super Bomber at Wichita, Kan. At left is Brig. Gen. Ray G. Harris, supervisor of the Midwestern Procurement District, and, at right, J. E. Schaefer, Boeing vice president and general manager of the Wichita Division.

Railroads Ask 'Equality' for All Forms of Transportation

Regulation, Taxation and Subsidies Should Be Equal—Fletcher

THE Association of American Railroads has asked Congress for "equality in the matter of regulation, taxation, and subsidies" for all forms of transportation.

The request was made last fortnight by the Association's vice president, R. V. Fletcher, appearing before the House Public Buildings and Grounds Committee. In his testimony, Fletcher depicted the railroads as "regulated" while air transport is "promoted"; the railroads as "taxed," while the airlines are "subsidized." And, the irony of this situation, he indicated, is that the Government probably uses the railroads' annual tax payment approaching $2,000,000,000 to develop their airline competitors.

The logic backing Fletcher's proposal to Congress appeared to be that the "grandfather" of transportation and the "infant" of the family should be treated identically. His arguments disregarded the alternative logic, namely, that the same treatment should be accorded air transportation as was accorded rail transportation at the same stage of development.

● On Regulation

Declaring that "the railroads are regulated from the cradle to the grave," Fletcher said:

"I am only insisting that other forms of transportation should be regulated to the same degree, in order that the competitive race may be fair." Air transport, he observed, is under the jurisdiction of the Civil Aeronautics Board, "a promotional, rather than a regulatory body."

Fletcher predicted that eventually all forms of transportation will be under the control of the same regulating authority.

"This would seem to be essential," he commented, "in order to bring about something like equality of treatment and so that processes of regulation may be promulgated by a supervising authority which looks at the whole picture and issues its mandates with reference to the relative importance of each form of transportation and the particular field it is best qualified to occupy."

● On Taxation

Railroads should be allowed to accumulate tax-exempt reserves now for the purchase of new equipment to improve services for the postwar period of "intense competition," Fletcher told Congressmen.

He recommended that the allowance for reserves be equivalent to the amount that the railroads would be spending for new equipment during the war period, if the equipment were available.

Railroads after the war "must" give the country transportation that is "sufficient, speedy and cheap" if they are "to hold their own in a fiercely competitive struggle," Fletcher emphasized. Railroads will switch to light equipment after the war, he said, so that they will be "hauling revenue weight instead of dead weight."

As of November 31, 1943, the latest date for which figures are available, the railroads had in their treasuries about $1,750,000,000 in cash and liquid assets, Fletcher reported. "I am very hopeful that they will emerge from the war with at least $2,500,000,000 available" in assets with which to improve their equipment and services, he added.

While the House committee listened to Fletcher's plea for Congressional generosity to enable the railroads to improve equipment and services to the public, another committee of Congress—Senate Military Affairs—heard Assistant Attorney General Wendell L. Berge, chief of the Justice Department's Anti-Trust Division, criticize restrictive trade agreements between leading railroads to avoid outlays for improvements. Berge charged certain railroads with monopolistic agreements designed to prevent the installation of air-conditioning and other improvements to public service.

● On Subsidies

"If we are to have the type of competition that many advocate, certainly all forms of transportation should be freed of handicaps or, in the alternative, should be equally handicapped," Fletcher maintained. "We cannot go on with huge subsidies to the water lines, to the air lines and the motor carriers, while at the same time requiring the railroads to pay their own expenses and contribute to the public welfare an enormous amount of their net earnings in the way of taxes."

He continued:

"While I think it would be a very great error to abolish all forms of regulation and indeed, such action is unthinkable, yet if Congress saw proper to abolish all types of regulation and control, the railroads would probably be able to survive, even in a condition of affairs where the law of the jungle is supreme. But clearly, if there is to be an opportunity for industry to make an intelligent selection of the type of transportation it prefers, there must be equality of treatment, which means simply that there should be no subsidies or else that all should be equally subsidized. Personally, as one who is devoted to what I believe to be the American principle of individualism, I would much prefer the withdrawal of all subsidies, so that the Government would pay to the various forms of transportation only those amounts which will compensate fairly for services rendered to the Government."

Fletcher specified that foreign air and shipping transportation subsidies should be governed by a different set of facts than subsidies for domestic service. In the foreign field, he suggested, the Government must take into consideration foreign competition with lower wage scales, etc., and subsidize to the extent necessary to maintain our international services.

The extent of expansion that will take place in the postwar period in the motor carrier and water carrier fields are known to the experts, but the extent of air transportation development remains speculative, Fletcher said.

On postwar motor transportation he reported: "It will undoubtedly follow that motor transport will be very active, since it is likely that manufacturers of motor vehicles will be seeking markets and very probably governments, National and State, will enter upon an active period of repairing and extending highways, if for no other purpose than to improve the employment situation. However, motor transport, prior to the war, had settled into a definite pattern which is not likely to be essentially different in the postwar period."

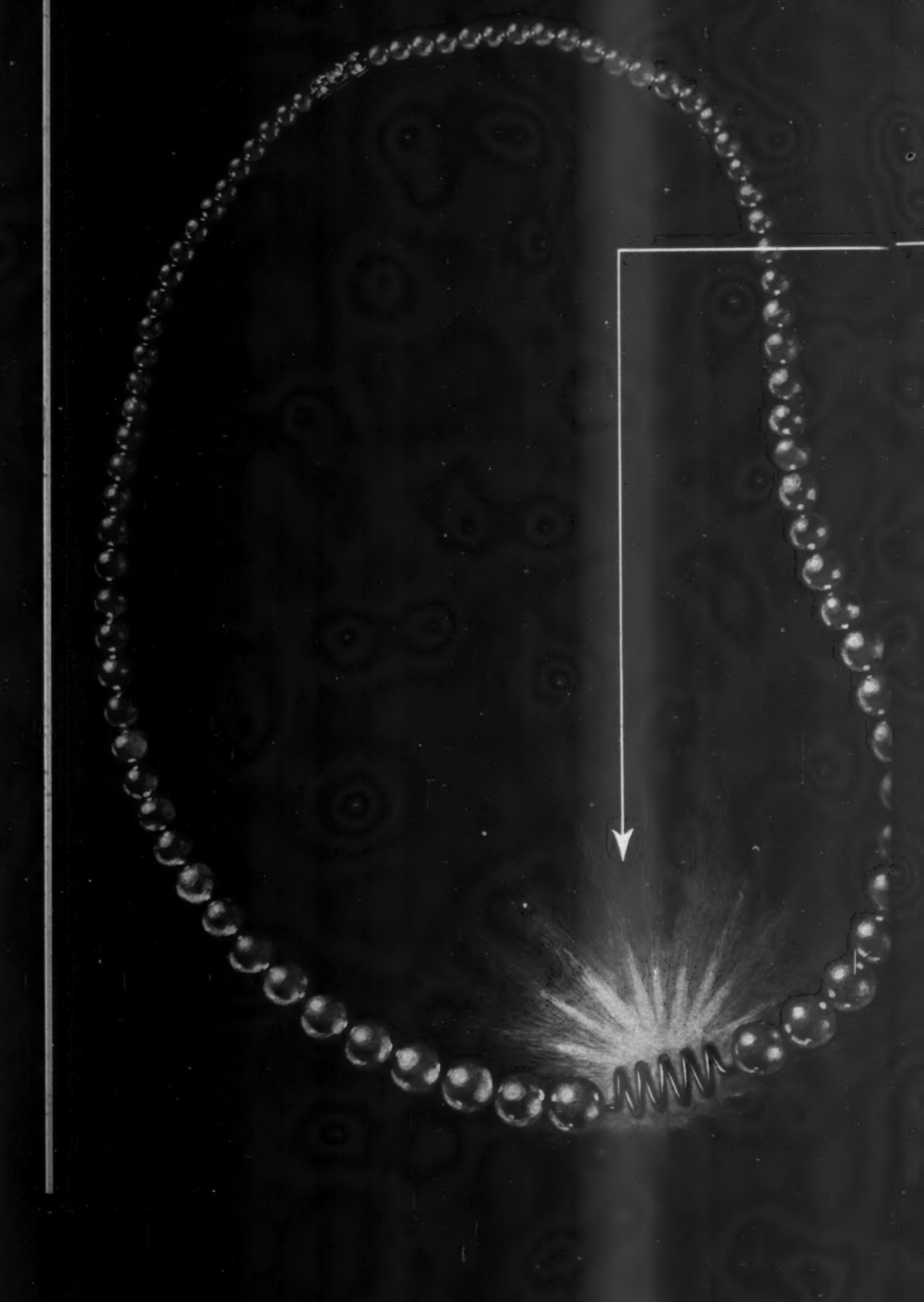
On postwar domestic water transportation, he predicted that the great supply of merchant vessels which will be available after the war "will be seeking tonnage, so that we may look confidently forward to a revival of freight transport between the West Coast and the East Coast, as well as renewed activity in the matter of intracoastal traffic."

On postwar domestic air transportation, Fletcher observed:

"When it comes to air transport, however, we are met with a variety of opinions, ranging all the way from those who do not expect the air to make any substantial inroads upon traffic now moved by surface carriers to those who have visions of the air filled with cargo-carrying airplanes, which will encroach substantially upon the business of the railroads, the highway carriers and the water carriers. Doubtless, the correct view lies somewhere between these extremes. No one can doubt that there will be substantial increases in the volume of freight and passenger traffic moving through the air. The war has immensely quickened the development of air transport, not only in the number of planes, but in the matter of increased capacity. Those of us who are concerned particularly with the welfare of the railroad industry, do not, however, expect that the airplanes will take all the passenger traffic, or all of the mail, or any very considerable amount of bulk freight traffic, which is the principal source of revenue for the railroads.

Cost Important

"The question of cost will be critical and determining. It is likely that improvements and economies in the matter of air transport will reduce the cost of moving freight and passengers. However, without going into too much detail, it is reasonably safe to assume that freight traffic cannot move through the air at a cost of less than 15 cents per ton mile, taking into consideration the cost of collecting and delivering the freight and assuming that the airlines pay a reasonable amount for the use of landing fields and other ground facilities. When this is contrasted with the cost of railroad freight traffic, which is less than one cent per ton mile on the average, it will be seen that only through the grant of enormous subsidies or as a result of some revolutionary discovery in the field of air transport not yet in sight, will the airplanes be able to compete with the railroads for any freight traffic except articles of light weight, or possibly in the transportation of materials where there is an urgent need for expedition."



Priceless!

THIS necklace with its radio frequency coil pendant would bring smiles to the faces of Fifth Avenue strollers. But to an airplane pilot in the South Pacific the value of this tiny coil is beyond price, for its failure might cost him his life.

The value of the copper in this coil is less than a penny, but the engineering, the patient research, and the care which go into its construction is measured in thousands of dollars—for this coil is an essential part of the radio equipment which makes it possible for an Army or Navy pilot to find his way back to a moving carrier or a tiny island base.

Because of its importance, this coil is manufactured with the greatest care. For example, it is slowly annealed five times for many hours so that it will not change its shape and, correspondingly, its frequency under the severest cold in Alaska, or the most intense heat at Guadalcanal. The mandrels on which it is wound are machined to tolerances of less than a thousandth of an inch. After winding, it is silver-plated. Finally, only the most skilled hands mount it in the RCA Aviation Radio Equipment of which it is a part.

Thus RCA builds into its Aviation Radio Equipment reliability and precision which save lives, and make needless sacrifices unnecessary.

RCA AVIATION RADIO

RADIO CORPORATION OF AMERICA

Camden, N. J.

BUY MORE WAR BONDS

Tipton Appointed Counsel for ATA; Formerly at CAB

S. G. Tipton, formerly assistant general counsel of the Civil Aeronautics Board, has taken over his new duties as counsel for the Air Transport Association. He was appointed after the Washington law firm of Covington, Burling, Rublee, Acheson and Shorb severed its legal representation of ATA in order to represent one of the airlines.

Graduating with a doctor of laws degree from Northwestern University in 1935, Tipton went into government service immediately as a lawyer in the Resettlement Administration. After a few months service there, Tipton went into the Legislation division of the treasury department.

When the inter-department committee representing Commerce, the Post Office, Treasury, State, War and Navy began consideration of the need for new legislation on aviation, Tipton and George C. Neal, now general counsel of CAB, were assigned the task of writing the CAA act which passed Congress and became effective Aug. 22, 1938.

Clinton Hestor, assistant general counsel of the Treasury department, was made the first CAA administrator. Tipton was made head of the Regulation and Enforcement Division of CAA in September of 1938. Following the passage of the Reorganization Act, Tipton was made assistant general counsel in charge of Safety regulations. At the time of his resignation recently, he was in charge of Economic Regulations.

Gen. White Promoted

Brig. Gen. Thomas D. White, former Chief of Staff, Third Air Force, has been appointed Assistant Chief of Air Staff, Intelligence, the War Department announces. Gen. White succeeds Maj. Gen. Clayton L. Bissell, who recently became Chief of the Intelligence Division, War Department General Staff.

Morgan Will Direct State Department's Aviation Activities

Stokeley Morgan, who has played a big hand in Latin American aviation matters as vice president of Defense Supplies Corp., and director of its Division of American Republics Aviation, has been appointed director of the U. S. State Department's Aviation Division. This division recently was raised to a new status from that of a "section" within the State Department in a reorganization announced by Secretary Hull.

Beginning in 1916, Morgan served as embassy secretary in London, Copenhagen, Bolivia, Columbia, Latvia and Panama for eight years. Other service included: charge d'affaires to Honduras; assigned to State Department as assistant chief of Division of Latin American Affairs, 1925-27; chief of that division, 1927-29. He was with Pan American Airways from 1932 until joining DSC as director of various subsidiary airlines. From 1929 to 1932 he was with Lehman Brothers, investment brokers.

Charitable Organization Established by Braniff

Incorporation of a non-profit charitable organization to be known as The Braniff Foundation, established for the purpose of supporting religious, charitable, educational, scientific and literary undertakings, has been announced by T. E. Braniff, president of Braniff Airways. The original intention of the foundation had been for the improvement and development of aeronautical science and practice, Mr. Braniff explained, but it was finally decided to impose no restrictions upon the administration of the funds or activities of the foundation except those imposed under the laws of the State of Texas. Offices of the Foundation will be in Dallas.

Aviation Calendar

March 21—Meeting of Civil Aviation Joint Legislative Committee; policy committee to report; Washington, D. C.

March 25 to April 1—First annual Northwest Aviation Exposition, Minneapolis Municipal Auditorium, sponsored by Greater Twin Cities Chapter of NAA.

Apr. 27—National Light Aircraft Meeting, Institute of Aeronautical Sciences, Detroit, Mich.

Apr. 28. 29 and 30—Southwest Aircraft and Accessories Exposition, Mustang Airport, Dallas, Tex.

April—Engine and Accessory Production Meeting, Institute of Aeronautical Sciences, Detroit, Mich.

July—Design and Postwar Planning Meeting, Institute of Aeronautical Sciences, Los Angeles.

October—Air Transport Meeting, Institute of Aeronautical Sciences, Washington, D. C.

Nov. 11-15—Second National Aviation Planning Clinic, Oklahoma City.

Littlewood Named Head of SAE's Air Transport Group

Organization of an SAE Air Transport Engineering Activity Committee to facilitate cooperative solution of engineering problems arising in airline operation has been announced by the Society of Automotive Engineers.

William Littlewood, engineering vice president of American Airlines, Inc., has been appointed chairman of the committee, which becomes SAE's 11th professional activity.

Members of the new committee are:

Vice-Chairman, Thomas Wolfe, Western Air Lines, Inc., Los Angeles, Calif.; Meetings Chairman, Charles Froesch, Eastern Airlines, Inc., New York; Membership Chairman, H. D. Hoekstra, Civil Aeronautics Administration, Washington, D. C.; W. G. Ainsley, Sinclair Refining Co., East Chicago, Ind.; Peter Altman, Detroit, Mich.; A. L. Beall, Wright Aeronautical Corp., Paterson, N. J., and A. W. Dallas, Air Transport Association of America, Washington, D. C.

Col. Harold R. Harris, Air Transport Command, Washington, D. C.; J. A. Herlihy, United Air Lines Transport Corp., Chicago, Ill.; K. O. Larson, Northwest Airlines, Inc., St. Paul, Minn.; Harold R. Porter, Transcontinental & Western Air, Inc., Kansas City, Mo.; Captain C. H. Schildhauer, Naval Air Transport Service, Washington, D. C.; Humphrey Toomey, Pan American Airways System, Miami, Fla.; and Edward Warner, Civil Aeronautics Board, Washington, D. C.

The committee is authorized to deal with the engineering problems of air transport operations, and to work with airline engineering departments and with operators of lines transporting passengers and cargo by plane. It will have, in the field of air transportation, functions similar to those of the SAE Transportation & Maintenance Engineering Activity in the field of highway transportation. Similarly, it will be concerned with the work of operators rather than of manufacturers of equipment, who already are served by the SAE Aircraft and SAE Aircraft Engine Engineering Activities.

The committee will foster the program of the SAE Air Cargo Meeting, and the programs of such other meetings as come within its scope.

STORY OF A PILOT AND AN AIRLINE

1 December, 1927, when Wm. B. Lester was test pilot for Fairchild, sectional air transport companies operated throughout the country. By 1931, American Airways had taken over the operation of a number of these lines, and Montreal passengers could fly American all the way to Los Angeles. Bill Lester graduated from testing planes to become co-pilot on American's commercial routes.

2 1933—Co-Pilot Lester, interested in improving his skill, "flew" one of the first models of the *Link Trainer* when it was tested before a curious crowd at the old Newark Airport. May 13, 1934, American Airways became *American Airlines, Inc.* Lester continued with the company as a full-fledged pilot. He became Assistant Flight Superintendent at Chicago in September, 1936.

3 January, 1937—American Airlines installed the first Link Trainer in Chicago. Then Hugh L. Smith, now Vice President, stated: "The Link Trainer enables the pilot to brush up on the radio signals and beams of another route; to perfect technique in approaching the airport by instruments." Bill Lester became Link Instructor; then Chief Instructor, Pilots' School.

4 December 8-11, 1941: The United States declared war on Germany and Japan. Shortly after, American Airlines turned over almost half its proud fleet of "Flagships" to the Government for war service. In the remaining planes, American carried increasing numbers of passengers on essential missions, military personnel and cargo urgently needed in the war.

5 Today, American Airlines is operating over routes totalling 8,454 miles. Its overseas flights, for the Air Transport Command, reach to the four corners of the world, with 150 trans-Atlantic crossings monthly. Seven thousand employees keep the "Flagships" flying and are making a major contribution toward winning the war.

6 American Airlines has given instrument flying instruction to more than 1,000 of its own pilots in the Link Trainer. All American pilots are required to take Link Trainer refresher courses, even million-mile pilots like E. J. Goeringer, pictured above.

7 Now in charge of pilot-training, Capt. Lester is married to former American stewardess, Hazel Brooks, at present Supervisor of Stewardess Service for the company. Lester says: "Link Training has materially increased the air transport capacity of American Airlines, with undiminished safety, under rigorous war-time conditions."

★ *Aviation looks to Link for creative engineering and high standards of manufacture. Look for the name* LINK *on precision products after the war.* ★

LINK is proud to have a part in the great job being done by American Airlines. Link Aviation Devices, Inc., Binghamton, New York; Link Manufacturing Company, Ltd., Gananoque, Ontario—Link Trainers, Aviation Sextants, and other products contributing to the safety of flight.

GO!

The signal man whips his flag downward. With engine revved open, the dive bomber roars down the flight deck, receding into a perfect take-off.

Aerols* are an important factor in successful carrier take-offs and landings, helping the pilot perform these exacting tasks with speed and safety.

THE CLEVELAND PNEUMATIC TOOL CO.
AIRCRAFT DIVISION • • CLEVELAND 5, OHIO

Also Manufacturers of Cleco pneumatic tools, Cle-Air shock absorbers for vehicles and Cleveland rock drills for mining and construction.

*THE PNEUMATIC-HYDRAULIC (AIR-OIL) SHOCK ABSORBERS ON AIRCRAFT LANDING GEAR

Price Reductions on B-24's Save AAF $100,000 Apiece

GRADUAL price reductions on B-24 bombers over the past two years have saved the Army Air Forces over $100,000 apiece. This is a typical example of the savings made possible by improved methods of mass production and by careful cost analyses, according to Brigadier General Albert J. Browning, Director of Purchases for the Army Service Forces and Special Assistant to the Under Secretary for AAF Purchasing.

General Browning said the AAF has just signed a contract for 4,500 B-24 bombers at $137,000. This compares with a price of $238,000 each for 1,200 B-24 bombers placed with the same firm two years ago and represents a saving of more than $450,000,000 under prices paid at that time.

If this last purchase had been placed at the contract prices of only a year ago, the total would have been $171,000,000 more than today and included in the present price are improvements valued at several thousand dollars per airplane," he pointed out.

Item prices have declined about 20 per cent from the levels of two years ago resulting in an estimated saving of over $9,000,000,000. Another $4,700,000,000 will be saved during the first six months of 1944 on this same basis of letting contracts below the January, 1942 level, it was revealed.

The lack of competition and of historical background for costs were the major problems faced by the Purchases Division in its attempt to set fair prices for munitions in the first months of the war. The War Department has found that a continuous pressure on prices forms an artificial equivalent for competition, forcing manufacturers toward lower costs and increased production. "Companies without price control are likely to have sub-standard production," Glen A. Lloyd, Ass't Director of Purchases, stated.

The growing amount of information on costs and comparative prices is making possible an increasingly better evaluation of contractor profits," Lloyd said. "As a result the likelihood of excessive profits in 1944 should be greatly reduced. On the other hand, there will be an increased opportunity for properly rewarding higher efficiency."

If the Renegotiation Statute is discontinued at the end of 1944, Lloyd predicted the War Department would have to effect a greater control over prices paid to subcontractors. A study made in 1943 showed that 51 per cent of every dollar received by the War Dept.'s largest prime contractors is spent by them with subcontractors and suppliers. "This makes the purchasing agents of business almost as big buyers as the Government. We want them in 1944 to carry out a close pricing program through all the tiers of subcontracting," he added.

It was further revealed that all Technical Services of the War Dept. have been instructed that by June 1 all contracts for repeat and continuation orders are to be placed at prices which can be exempted from renegotiation.

"American industry is entitled to credit and praise for the magnificent contribution it is making to winning the war," General Browning stated. "This not only applies to the production miracles performed by industry, but also to the cooperative manner in which industry has approached the question of prices and profits on war production. Except for almost an infinitesmal fraction of businessmen, manufacturers have voluntarily and in cooperation with the procuring services continuously reduced costs and prices."

Bell Gets P-39 'Made in Russia'

When Bell Aircraft Corporation's four-man technical mission to Russia returned to the United States recently, they brought Lawrence D. Bell, president, a P-39 Airacobra which Red Air Force pilots fashioned expressly for him Bell is shown (center) inspecting the model. Members of the mission are pictured with him—left to right, William G. Hawkins, Leighton W. Rogers, Frank J. Ziombeck, and George D. Ray.

Wilson Sees Further Increase in U. S. Aircraft Production

"The American aircraft industry has the management, the mechanical genius and the manpower to maintain and even increase its superb production record," Charles E. Wilson, Executive Vice Chairman of the War Production Board said in a recent statement.

Pointing out that the aircraft manufacturing potential of Germany is rapidly being cut back, Wilson said, "The Army Air Forces have destroyed 40 per cent of Germany's capacity to produce fighter planes." He pointed out that the percentage was rapidly becoming higher due to the recent series of raids against Dessau, Braunschweig, Halberstadt, Greater Frankfort, Fechenheim, Hochst, Leipsig, Offenbach and Ludwigshaven.

"As the German ability to produce combat planes declines, the ability of the American aircraft industry to produce more efficient combat aircraft types in greater numbers is gaining momentum," he stated.

Wilson quoted a recent statement from the Aircraft War Production Council which points out that mass production of military aircraft has resulted in the reduction of construction time by 90 per cent. "An early fighter plane type took 157,000-manhours for construction. Mass production cut that time to 7800-manhours for the 1000th plane. A four-motored bomber took 200,000-manhours for construction in its early production stage. The 1000th plane of this model took 22,500-manhours. Now mass production has cut that time to 13,000-manhours for the 2000th plane."

Taking the history of the development of a "typical fighter plane" the Council found a 72 per cent decrease in manhours required each time production was doubled. It described the "magic formula " for bringing about this large-scale saving in the following chart:

Typical Fighter Plane

1st	plane—Model "A"	—157,000 manhours
10th	plane—Model "A"	—59,000 manhours
13th	plane—Model "B"	—59,000 manhours
90th	plane—Model "B"	—50,000 manhours
100th	plane—Model "C"	—26,500 manhours
700th	plane—Model "C"	—19,500 manhours
1,000th	plane—Model "D" to "F"	—7800 manhours

The "superb production record" of the aircraft industry was illustrated by the growth of West Coast plants. In 1940, Wilson said, "the Pacific Coast aircraft companies built approximately 2,600 planes and by December of that year had 87,000 employes. In one month—November, 1943—a single aircraft company, employing more workers than were at work in the entire industry three years before, turned out 1,038 planes. A plane came off the assembly line every fifteen minutes of the working day. There has been a corresponding increase in the workers employed in aircraft production throughout the entire country during the same period."

"The output of the American aircraft industry is destined largely for the fighting fronts. Planes will go to their destination," Wilson predicted, "in ever-growing numbers. Once there, they will swell the ranks of Allied aerial task-forces—some of which are assigned to the duty of striking further devastating blows at enemy aircraft production."

Arnson Wins Marconi Medal; Once Worked With Famous Inventor

Ludwig Arnson, president of Radio Receptor Co., Inc., has received the Marconi Memorial Medal of Achievement for 1943. The award reflects Arnson's 40 years' service in radio communications development, dating from his work with Marconi during the construction of the first trans-Atlantic radio transmitter. In recent years, Arnson has pioneered the use of safety equipment for air transport.

Arnson

The pioneer radio engineer has made a vital contribution to aviation through his development of radio range systems for the Civil Aeronautics Administration. He built the traffic control apparatus for New York's La Guardia Airport and for the National Airport at Washington, D. C.

Plastic Tooling Experts Form National Society

Warplane manufacturing specialists in the plastic tooling field met in New York this month to organize a national organization. Charter membership is being held open for invited West Coast and other industrial area participation.

Aim of the National Society of Plastic Tooling was explained: "to bring together for the first time those practical men who are responsible for the development of plastic tooling as a recognized production process. These men, in most instances, have worked individually. The free exchange of their respective 'know-how' should greatly accelerate its further development."

Delmar Anderson, superintendent of Production Planning and Tool Design for the Buffalo plane plants of Curtiss-Wright Corporation was elected president. Thomas A. Herbert, superintendent of the plastic, plaster and foundry departments in the Allentown (Pa.) plant of Consolidated-Vultee Aircraft Corporation was made vice president. Harry W. Tompkins of Curtiss-Wright, was elected secretary and Charles H. Miller, of Bell Aircraft Corporation, treasurer.

Initial companies participating were Curtiss-Wright Corporation, Bell Aircraft Corporation, Grumman Aircraft Engineering Corporation, Consolidated Vultee Aircraft Corporation, and the Glenn L. Martin Company. While the organization has had its inception in the aircraft industry, hope was expressed that other manufacturers to whom plastic tooling is applicable, would also join. The cost saving factors of plastic tooling make it interesting to all types of manufacturers, both large and small, the association prospectus asserted.

Wilson Leaves NAA; New Nat'l Program Sent to Chapters

Two developments within the National Aeronautic Association were reported during the past fortnight: the resignation of Gill Robb Wilson as president of the association was confirmed, and the NAA executive committee submitted to local chapters and national councillors for approval details of its proposed national program. The proposed program is based on the objective of serving "the consumer level of aviation—the men and women who own, rent, and fly personal aircraft, travel by airline or chartered plane, and dispatch property and mail by air."

William R. Enyart, a vice president, was named to succeed Wilson, who has been serving his fourth term as non-salaried head of NAA. A former transport pilot, Enyart was from 1931 to 1939 a member of the association's staff. He was later president of Simmonds Aerocessories, Inc.

Wilson is to become aviation editor of the New York *Herald Tribune*. In announcing his resignation, NAA issued a statement commending him for the "great service rendered to the association and to aviation at large." It was noted that his service "is all the more appreciated because it has had no material reward."

Glen B. Eastburn of Los Angeles was named to succeed Enyart as vice president. Appointment of the following new members of the board of directors also was announced:

Thomas Buck, Ft. Worth, Tex., attorney; Wesley E. Keller, vice president, Truax Traer Coal Co., Minot, N. D.; O. S. Warden, publisher Great Falls, Mont., *Tribune;* and W. Percy McDonald, chairman Tennessee State Aviation Commission, Memphis. Richard C. Palmer was elected to the executive committee.

Chapters and councillors have been asked to submit their comments on the national program to NAA by the end of the month, it was announced by Lowell H. Swenson, manager, after which public announcement of details will be made. The program is outlined under the following major headings: private flying, aviation education, postwar membership services, commercial air services, aircraft industry, national defense.

Sikorsky Wins $1,000 Fawcett Aviation Award

The 1943 Fawcett aviation award was presented to Igor Sikorsky last month for his work in developing the helicopter. Sikorsky, who is engineering manager of the Sikorsky Division of United Aircraft Corp., received a trophy and $1,000 from Fawcett Publications, Inc., donor of the award.

Other Fawcett prizes went to the Air Transport Command for its pioneering of global air routes; the engineering department of Bendix Aviation Corp. for development of the gyrofluxgate compass; Bell Aircraft Co. and General Electric Co. for development of the jet propulsion plane; Edward C. Wells of Boeing Aircraft Corp. for his design of the B-29 bomber; and Vladimir Ipatieff, Chicago, for his part in the development of 100-octane gasoline and triptane.

Vice Admiral Towers Gets Important Pacific Post

Appointment of Vice Admiral John H. Towers, U. S. N., as Deputy Commander in Chief, Pacific Ocean Areas, was announced by the Navy Dept. on Feb. 11.

Towers

Admiral Towers, one of the Navy's pioneer airmen and formerly chief of the Bureau of Aeronautics, thus became second in command to Admiral Chester W. Nimitz, Commander in Chief of the Pacific Fleet—a significant recognition of airpower in the Pacific. Towers for the past year and a half has been responsible for the training and administration of all Naval aviation in the Pacific.

Vice Admiral John H. Newton, whom he succeeded, was assigned as Deputy Commander of the South Pacific Force.

Britain May Cut Aircraft Production, Say Dispatches

Press dispatches from Great Britain, but unsubstantiated from any other source, indicate that Britain proposes to cut its aircraft production.

According to the London Daily Mail: "Thousands of men and girls long employed in the aircraft industry soon will be called into the services or will be transferred to other war work. The production program is in such a healthy state and the labor position has been so successfully dealt with that the industry can afford to dispense with some workers. This follows the biggest output year in British aircraft production history."

House Passes 'Coal-Gas' Legislation; Authorizes $30,000,000 Investment

Legislation authorizing the Government to invest $30,000,000 for the development of liquid fuels, including aviation gasoline, from coal was passed by the House last fortnight.

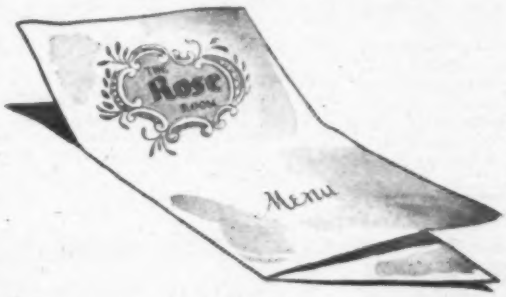
The legislation was sponsored by Rep. Jennings Randolph (D., W. Va.). A companion measure, sponsored by Sen. Joseph O'Mahoney (D., Wyo.) has already passed the Senate.

Differences between House and Senate versions of the legislation will be ironed out by a joint conference group.

In presenting the legislation to the House, Randolph read a letter from Petroleum Administrator for War, Harold L. Ickes, emphasizing the vital need for development of synthetic fuels. Ickes declared: "The R.A.F. air fleet that bombed Berlin last night uses in part British-made synthetic fuel. The Luftwaffe that met it uses in part German-made synthetic fuel. Japan has synthetic fuel. It is a matter of chagrin to America that we do not already have synthetic gasolines."

They wouldn't fly without them...

Blue baby shoes always hang on the steering column of a famous bomber, whose pilot regards them as his "holy of holies" and refuses to fly without them.



A tattered menu, souvenir of a wonderful party, went along on more than 40 missions in the jacket of a flight engineer. It even survived a water crash landing in the Southwest Pacific.

A pair of white kid gauntlets, memories of some extra-special girl, bring good luck to a pilot who always slips them on when he takes over the controls to make a bombing run.

ETHYL
BRAND OF ANTIKNOCK COMPOUND
ETHYL CORPORATION

ETHYL is a *trade mark* name

Ethyl antiknock fluid goes along with every fighting plane powered by U. S. made gasoline. *It goes into every gallon of fighting grade aviation fuel*—and today more Ethyl is being used in each gallon than ever before.

ETHYL CORPORATION

Chrysler Building, New York City

States Becoming Aware Of Need for Air Plans

By CONRAD CAMPBELL

THE STATES are showing an increasing awareness of the need for statewide planning to meet local aviation needs in the postwar period.

New aviation commissions are being formed. Legislation designed to govern airline and civilian flying is being introduced in states which are holding sessions this year, and is being prepared for next year's sessions in others. Statewide airport systems are being laid out, and communities are being urged to plan for airport, airstrip and local flying field development.

Recent actions within several of the states indicate the trend. In Arizona, for instance, the Arizona Corporation Commission has been conducting hearings within the past two weeks on intrastate air operations. Applicants appearing before the Commission include the Sky Harbor Air Service, which holds a certificate for charter operations in the state; Southwest Airways Co.; Arizona Airways, a War Training Service operator; Alabama Freight Lines, Inc.; Double H. Airways; and H. M. Watson, an individual.

American Airlines, Inc., and Transcontinental and Western Air, Inc., have intervened and the Southern Pacific Railroad and Pacific Greyhound Lines sent representatives to sit in on the hearings. James Ray, vice president of operations of Southwest Airways, recommended to the commissioners that they postpone granting of franchises until after the war when suitable aircraft for economical operations would be available.

In California, a new Transportation Department of the Los Angeles Chamber of Commerce has been formed. This will combine the functions of former Aviation, Traffic and Maritime Departments to coordinate all transportation work. It is headed by Glen B. Eastburn, former manager of the aviation department. Murray Thomas, former assistant aviation manager, is secretary of the Aviation Section.

Illinois Survey Announced

A statewide survey of present airport facilities and new proposed sites in order to formulate future expansion plans of the "hundreds of communities now clamoring for air service" is announced by the Illinois Aeronautics Commission. In addition to providing "off-line" cargo and passenger connections to the major air transport services, small community fields across the state are being planned as "neighborhood" flying schools.

Chicago is reported to be planning for airport construction within a fifty mile radius of the city, based on estimated air passenger traffic increase from 625,000 in 1940 to 4,800,000 in 1950. A prediction that a short line air service between Chicago and several downstate Illinois cities may be in operation before the end of the summer was made by W. T. Kitchin, secretary, treasurer of Belt Aviation, Inc., a Chicago firm which has applied for permission to operate such a service from the Illinois Commerce Commission.

In Pennsylvania, Governor Martin praising the initiative of state airport operators, told the Pennsylvania Aviation Trades Association: "With our density of population, and the fact that we have large areas sparsely populated, aviation should be developed first in Pennsylvania. There are over 180 towns and cities in the state with a population of 5,000 or more. I think each one will be interested in an air field." He added that he was opposed to a "lot of difficult regulations."

Detroit Has Plan

Creation of a Metropolitan Detroit Airport Authority to carry out a master plan of airport development in the Detroit area of Michigan has been recommended by the Aero Club of Michigan and the Engineering Society of Detroit. Three major points under proposal are: (1) A basic long-range plan for the development of twenty six airports of varying sizes to accommodate future growth of commercial, industrial and private flying in the area; (2) A sound engineering survey of existing airports and a determination of where they fit into the long-range, master plan; (3) Creation of a master authority to plan, initiate, and carry through a comprehensive multi-airport plan, assuming responsibility for location, engineering and financing of airports.

A special committee on aeronautics and aviation has been appointed in Mississippi and legislation (H. R. 352) has just been introduced to create a new State Aviation Commission.

Postwar construction of 217 new airports in Virginia will be aided by the Civil Aeronautics Authority, Allen Perkinson, Virginia Aeronautics Commissioner asserted, adding that tentative priorities have been set for the localities.

New Convert

The helicopter has won a new convert.

During a recent trip to New York as a member of the Senate's Truman committee, Senator Homer Ferguson, of Michigan, accepted an invitation to ride in an Army helicopter. When the pilot told Ferguson it was possible to "set 'er down" on a dime, the Senator picked out a playground close to Grand Central station and suggested that a landing be negotiated so that he could catch his train back to Washington.

But what neither he nor the pilot figured on was the crowd which was attracted by the landing and when the police took over because Ferguson was in civilian clothes, it took his Senate identification card to prove he wasn't from Mars or trying to "pull a Hess."

Mrs. FDR Gets 'Cheques'

Clipper Air Cheques, for use by international air travelers during intransit stops, have been introduced by Pan American Airways. In denominations of $1 and $5, the cheques may be converted into local currency by any Pan American office or designated agent, thus giving travelers an opportunity to get needed funds conveniently and in exactly the amounts required. In photo above, V. E. Chenea, vice president and general traffic manager of the airline, is shown giving Mrs. Franklin D. Roosevelt cheque book No. 1.

40-Day Extension Granted in Suit Involving Autogiro

A 40-day extension has been granted Kay Gyroplanes, Ltd., of Edinburgh, Scotland, for filing its answer in the U. S. District Court, Washington, D. C., to a suit instituted by The Autogiro Company of America involving rights to the autogiro invented by Juan de la Cierva. This will fix the return date early in March.

This extension was granted over the original 20 day return date when the U. S. Marshal's office filed a return that it had been impossible to obtain personal service on the defendants. The court then instructed that service should be obtained by registered mail.

Counsel for the Autogiro Company has asked the court to dismiss the proceedings against the individual defendants—John William Dyer and David Kay—because the plaintiff now has reason to believe that all rights in dispute concerning Cierva's invention are vested in the company. Further the plaintiff asserts that it has learned that Dyer and Kay joined the Royal Air Force and that Dyer has since been killed in action.

In its suit, Autogiro Company asks the court to set aside the findings of the Examiner of Interferences and the Board of Appeals of the U. S. Patent Office in connection with the award to the defendants of a patent covering what it terms are 11 claims involving the Cierva autogiro.

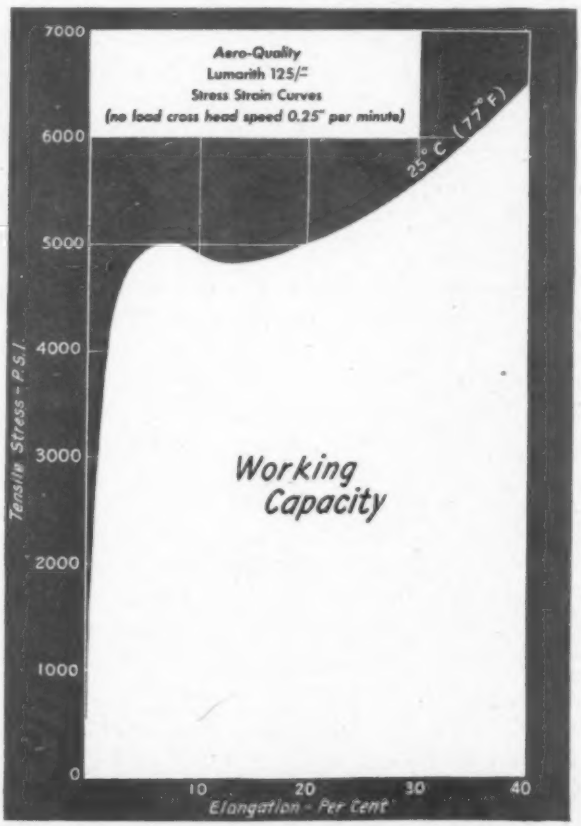
THE TOUGHNESS OF

Aero-Quality LUMARITH*

Gives Aircraft Designers a Chance to do things They Haven't Done Before

IMPACT STRENGTH

The impact strength of Lumarith is quite amazing. . . . Down around the minus sixties (Fahrenheit), it is about what designers are accustomed to expect from other plastics—that is 0.4 ft.-lbs. per inch of notch Charpy, on an ⅛" sheet at 50% R.H. But from there up, on the temperature range, the impact strength of Lumarith leaves other types of plastics for aircraft glazing far behind. . . . At 40° F., Lumarith impact strength passes 1.0 ft.-lbs. . . . At 150° F., it is greater than 4.0 ft.-lbs.



SELF-DISTRIBUTION OF LOCAL STRESSES

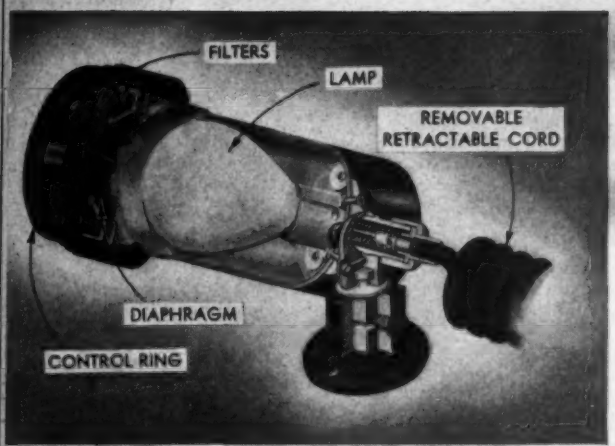
Another strong point in Lumarith's properties is its ability to relieve stress concentrations. With Lumarith, due to its "give," local stresses are readily transmitted to neighboring sections so that a more uniform stress distribution is obtained and local failure is less likely to occur.

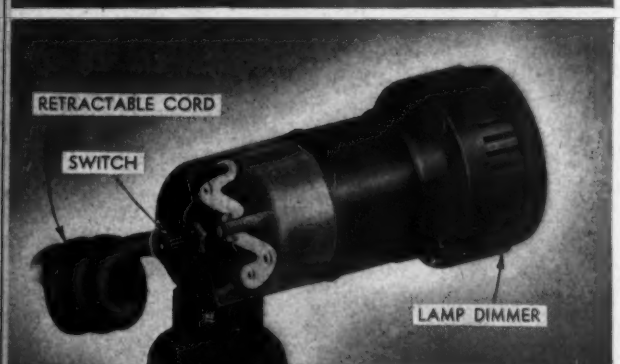
WORKING CAPACITY

The areas under the Aero-Quality Lumarith stress-strain curve show its excellent resistance to breaking or cracking under deformation. The figures are: 42 ft.-lbs. per cubic inch at 32° F. . . . 170 ft.-lbs. per cubic inch at 77° F. . . . 195 ft.-lbs. per cubic inch at 95° F. Above 100° F., other accepted plastics match Lumarith in this phase of toughness. But at the usual operating temperatures, Lumarith rapidly steps into a class by itself.

If you haven't received a complete set of graphs on Aero-Quality Lumarith, send for them immediately to Celanese Celluloid Corporation, *The First Name in Plastics*, a division of Celanese Corporation of America, 180 Madison Avenue, New York City 16.

*Reg. U. S. Pat. Off.



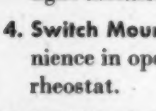


New X-244 Light gives exclusive advantages for Instrument Lighting

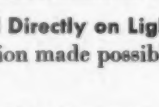
● Developed by *E·L* engineers to provide wider and more positive control of light intensity, the X-244 instrument panel light offers these definite advantages:

1. **Iris Control of Intensity of Ultra-Violet Light** — Camera-type diaphragm mounted between lamp and filter is operated by control ring to give any desired degree of intensity.
2. **Shutter-Control of White Light** is afforded by construction of ultra-violet filters, operated by same control ring.
3. **Does Away with Rheostat** — Mechanical control of light intensity makes rheostat unnecessary.
4. **Switch Mounted Directly on Light** — Greater convenience in operation made possible by elimination of rheostat.
5. **Quickly Detachable** — Lamp assembly can be easily detached from mount. Retractable cord makes possible use as emergency light in cockpit.

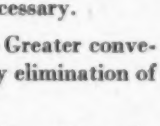
Complete details on this improved and simplified cockpit light will be gladly supplied on request.



Filter Shutters Open for Direct Light



Filter Shutters Closed for "Black Light"



Diaphragm Controlling Black Light Intensity at Minimum Opening

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E·L ELECTRICAL PRODUCTS — Vibrator Power Supplies for Communications ... Lighting ... Electric Controls ... Electric, Electronic and other Equipment ... on Land, Sea or in the Air.

Cost of Converting C-47, C-54A Estimated by ATA

IT IS ROUGHLY estimated by A. W. Dallas, secretary of the Air Transport Association and Air Cargo, Inc., committees on postwar planning that the cost of converting to civilian air transport use the Army C-47 (Douglas DC-3) will be approximately $10,000 and the Army C-54A (Douglas DC-4) will be in the neighborhood of $40,000 to $50,000.

The committee, which is headed by William Littlewood, American Airlines engineer, is working with the Douglas Aircraft company on these conversion specifications so that as soon as the Army releases either type, the actual conversion job can be accomplished.

At present the committee is working on a list of parts which will be required to make the change over. Similarly conferences are being held with Army authorities in the hope of obtaining some allocation of the time of Douglas engineers for the preparation of plans and specifications.

If all of the preliminary work could be accomplished in advance and if the parts were available, it is believed that the first actual conversion could be completed, possibly in a month. However, if all of the work must be done after the cessation of hostilities, the first converted Army transport plane might not be available for the airlines for at least six months, Dallas stated.

"The task before the committee, simply stated, is converting from an all cargo to an airline passenger plane," Dallas asserted.

Dallas believes that once the first conversion jobs have been accomplished, and the first rush on the part of the air lines is passed, the manufacturer will be able to convert these planes about as rapidly as they can be assimilated by the air transport lines.

The committee is giving study to increasing the length of the C-54 by from four to six feet. While this has not been definitely decided upon, it appears likely that most of this additional space would be allocated for cargo carrying purposes. It was explained if the planes can be caught early enough on the construction assembly lines, the addition of the extra section would not entail an especially difficult problem.

Dallas pointed out that the estimates, due to the fact that the change-over is still in the drafting room stage, should be regarded as more or less speculative.

'Russians Prefer Yak'

Soviet pilots prefer their own Yak fighters to all others, Maj. Vassily Matsievitch, one of Russia's crack night fighter pilots recently declared in an interview in Leningrad. Matsievitch has flown Spitfires, Hurricanes, and Airacobras. He said the Airacobra ranks next to the Yak.

Standard Oil's 'Intava' Ready to Supply U. S. Air Transport Needs Abroad

Intava, Inc., a new company organized by Standard Oil Company of New Jersey and Socony-Vacuum Oil Company, Inc., offers U. S. air transport companies a centralized service of supply in all foreign countries except those where government oil monopolies exist.

All outstanding stock is being held equally by the two oil companies. Sheppard Dudley, whose association with aviation goes back to 1909, heads the company which has been incorporated in Delaware and capitalized at $100,000. C. H. Baxley, with International Aviation Associates for some years, is vice-president. M. H. Eames is secretary and J. F. Seal, treasurer.

Coordination of All Types of Transport Urged by H. S. Palmer

Better service through coordinated transport, railway, air and highway, could be offered by the railroads to industry and business, if present barriers against surface carriers engaging in aviation are lifted, Howard S. Palmer, president of the New York, New Haven and Hartford Railroad, told the Advertising Club of New York, recently.

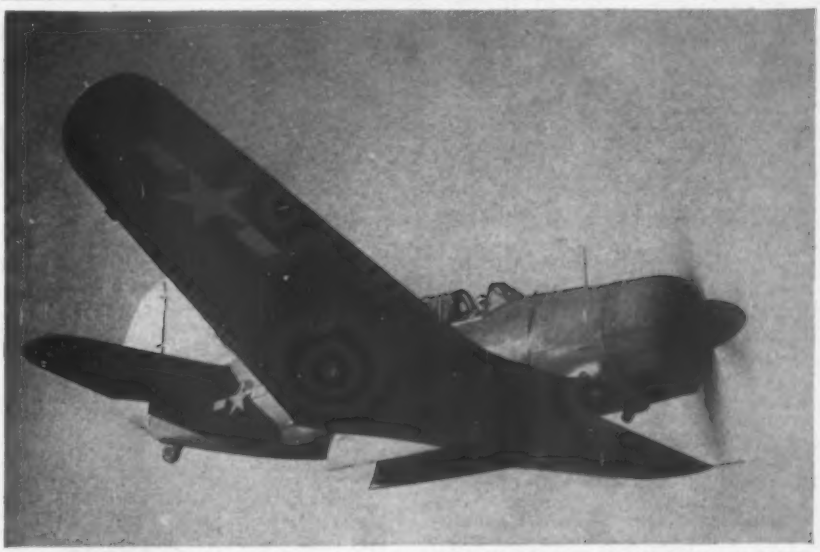
Urging Federal authorization of such an integrated transportation system, Mr. Palmer said "we can offer the shippers and travelers of New York and southern New England a better, more efficient, more dependable service at lower cost through coordination of all three modes of transportation.

He asserted that it would not be necessary for the railroad to operate or control an airline, but that it could join forces with an established line by obtaining a part interest in it.

"The airline that ties in with us," he continued, "will have all the advantages of our highway pickup and delivery service, our bus routes running by many proposed airport sites, our widespread private communications system, our warehouse facilities, our ticket selling agencies, our passenger and freight solicitation staffs already established in southern New England and every important traffic center in the United States."

Failure to allow surface carriers to enter the field of aviation would be the first instance in the history of the country in which the railroads had been barred from the development of a new mode of transportation, he concluded.

Helldiver for the Marines



Pictured above is the new Curtiss A-25 Helldiver, an attack-bomber which is a close counterpart to the Navy's hard-hitting Curtiss SB2C Helldiver. This plane, now being delivered to the Marines by Curtiss-Wright Corp., carries its main bomb load wholly within its fuselage with provisions for carrying additional bombs beneath its wings. It mounts four fixed wing machine guns and has an additional gun in its rear cockpit turret.

New Booklets

F. M. Lanter, Director Safety Regulation, CAA, announces publication of Flight Engineering Report No. 8, entitled "Equipment for Recording Airplane Takeoff and Landing Characteristics."

CAA has published a report entitled, "Calibration of a Permanent Control Beacon for a 300 Meter Photometric Range." The report was prepared by T. H. Projector and is known as preliminary Technical Development Report No. 34.

Cargo Experts Look for 25c Air Freight Rate After War

A COMPILATION of the average opinion expressed in a questionnaire circulated among the 54 engineers, market analysts, traffic managers and college leaders who attended the Air Cargo Research meeting in Chicago in January reveals an estimate that air cargo rates will drop to 25 cents per ton-mile five years after the close of the war.

This report discloses an estimate that 200,000 tons will be carried by air the first year that such a rate is in effect, compared with the 2,925 tons which were carried in 1939 when the rate was 88 cents a ton mile.

Delegates were asked: "What are your estimates or opinions on the following points?" and the table printed below represents an average between the minimum and maximum estimates:

	Actual 1939	Consensus of estimates for 5 years after the war
1. Volume in tons which could be developed at rates half the present average rate of 72c per ton-mile	2925 tons	75,000 tons
2. The average rate per ton-mile which will be in effect	$0.88	$0.25
3. The tonnage which will be carried at those rates	2925 tons	200,000 tons
4. The ton miles which will be carried at those rates	2,706,000 ton miles	150,000,000 ton miles
5. The average haul	925 miles	675 miles
6. The average wgt per shipment	6.7 lbs.	22 lbs.
7. The principal groups of commodities to be carried in order of importance	a. Machinery and parts (automotive, electrical, etc.) b. Newspapers, magazines, electrotypes, etc. c. Wearing apparel, shoes, hats, furs d. Printed matter other than newspapers, magazines, etc. e. Moving picture films, transcriptions, etc.	a. Machinery and parts b. Wearing apparel c. Newspapers, magazines, electrotypes, etc. d. Movie films, transcriptions, etc. e. Perishable commodities
8. The proportion of the total tonnage which will be represented by perishables	2.7%	10%
9. Should there be a "deferred" lower cost service in effect	.....	Divided
10. Should there be an airport to airport rate with an allowance for pickup and delivery by shipper or receiver	.....	Yes

Aviation Division of AAPM Names R. B. Collins Manager

Raymond B. Collins, recently civilian chief of priorities and statistical control sections of the Detroit Area Army Air Forces, has been made manager of the newly organized Aviation Division of Automotive and Aviation Parts Manufacturers, Inc., located in Detroit.

For three years, beginning in 1928, Collins was State Director of the Michigan Board of Aeronautics, the first such state board in the United States. He was manager of the aviation department of the Union Trust Company of Detroit for eight years and is a former lecturer on commercial aviation.

The Association reported that its 392 member plants are doing an overall business of more than three billion dollars a year. Of this, 29.3% was aircraft, including airframes, engines, propellers and parts, and equipment therefor.

Smith Named ATC Chief at Washington Airport

J. B. Smith, formerly in the Airway Traffic Control center at La Guardia Airport, New York City, has been appointed Chief Controller of the center at Washington National Airport.

Smith

Smith joined the Civil Aeronautics Administration in 1939 as a control operator at Newark (N. J.) Airport after working for eight years in the operations department of Eastern Air Lines at Jacksonville and Daytona Beach, Fla. He replaces Burt R. Moore in Washington. Moore has been transferred to Chicago.

Tennessee U. Plans Aviation Psychology Research Institute

The world's first research institute in aviation psychology is to be established at the University of Tennessee, it was announced this month.

It will be located at the old Island Airport, near Knoxville, Tenn., where technical and physical training programs will be carried on under the direction of a staff of psychologists headed by Dr. Robert Y. Walker, who has been active in aviation research for the National Research Council since 1940. Research projects are to be planned jointly by Dr. Walker, the Project Committee of the University, Dean Fred C. Smith of U-T, and NRC's Committee on Selection and Training of Aircraft Pilots in consultation with the Civil Aeronautics Administration's division of research.

The institute will be supported by the Civil Aeronautics Administration and the Tennessee Bureau of Aeronautics and will be administered by the National Research Council's Committee on Selection and Training of Aircraft Pilots.

Under the plan, civilian student pilots and discharged soldiers will be given free flight instruction by the institute in exchange for submitting themselves to the studies to be made of the responses to methods used by pilot teachers.

Research will be directed particularly toward determination of the human factors in airplane piloting. Physical and pyschological handicaps to flying will be determined, as well as possible remedies that might be applied. Out of the Institute of Aviation Psychology is expected to come methods of improving the training of pilots and of eliminating plane accidents that can be traced to psychological causes.

Studies in psychological factors affecting the selection, training and maintenance of airplane pilots was initiated by the Civil Aeronautics Administration in 1939, but heretofore no experimental agency has been created for the sole purpose of this type of research.

Three-Fourths of Space Sold for Big Northwest Aero Exposition March 25

Seventy-eight per cent of the exhibition space for the Northwest Aviation Exposition, March 5 to April 1 in Minneapolis has been sold, the Greater Twin Cities Chapter of the National Aeronautic Association reports. The NAA chapter is sponsoring the event, which is to be held in the Minneapolis Auditorium.

Partial list of exhibitors to date includes:

Minneapolis-Honeywell Reg. Co., Ohio Chemical & Mfg. Co., American Airlines, Franklin Transformer Co., Minn. Aeronautical Comm., Gray Co., Hinck Flying Service, Army Air Force, Butler Mfg. Co., O. B. McClintock Co., Northwest Airlines, Gopher Equip. Co., Marquette Mfg. Co., Coca Cola Co., Van Dusen Aircraft Sup., Metropolitan Airport Com., American Aviation Co., Naval Training Base, Pure Oil Co., Olson Mfg. Co., Mall Tool Co., Jari Products Co., American Smelting & Refining Co., Minnesota Specialty Co., United Refrigerator Co., and The Cornelius Co.

Inexpensive "L" Landing Strip on Edge of Town, Illustrated

Rosedale is a small town, but it is progressive. Already it has built its airplane landing strip for its own and other post-war fliers.

The mayor realizes that the coming air age is nearly here, that forty-eight local boys in the Air Force and three local girls in the WAFS will want to fly after Victory. He knows that everyone is air-minded and that the community with landing facilities will go ahead.

When you get your peacetime Piper Cub, you can land at Rosedale for the big county fair. And, you can go to thousands of other towns, take vacation and business trips with ease, pleasure, safety and economy.

But, will you be able to take-off from your own town? For the convenience of its citizens and for its future, your town should plan inexpensive landing facilities now. A new booklet, "What Your Town Needs for the Coming Air Age", gives the why, where and how of building them. For your free copy, write Piper Aircraft Corporation, Department AA34W, Lock Haven, Pennsylvania.

GET YOUR AVIATION BOOKLET—"Piper Cub . . . In War and In Peace." Full color, 32 pages. Covers history of light plane, Piper Cub planes, coming air age, how to fly. Enclose 10c in stamps or coin for postage-handling. Write Piper Aircraft Corporation, Department AA34, Lock Haven, Pennsylvania.

16mm. SOUND FILM—"The Construction of a Light Airplane." For distribution points write: Supervisor, Audio-Visual Aids, Extension Services, Pennsylvania State College, State College, Pennsylvania.

PIPER *Cub*

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Standard Type of Physical Exam for Pilots is Urged

WIDE DIFFERENCES in practices and standards as between Army and Navy physicians, and also between the military and CAA physicians and between CAA physicians themselves, in the certification of pilots are noted in three reports prepared by Raymond Franzen and Dean R. Brimhall, of the Division of Research, Civil Aeronautics Administration.

Commenting on the reports this week, Brimhall stated that early in the national defense training program, Army, Navy and CAA medical authorities had held a conference in an attempt to set up some standard form of examination with the hope of obtaining a more uniform set of results than might be expected from methods then in use. This was especially desired by CAA because in its pilot training program, pilots would be going into both branches of the Armed services. However, after a long discussion, no agreement was reached and all went their separate ways, and the record indicates that at least as far as physical examinations are concerned, all branches obtained a completely different set of results.

Three Studies Cited

Brimhall still believes that CAA, the Army and Navy will ultimately get together on a standard type of examination. He feels that the three studies entitled, "Analysis of Physical Defects Found by the Armed Services in Pilots Certified to be Without Disqualifying Defect by Civil Pilot Training Examination," "Problems of Consistency Arising from CAA Medical Examinations" and "The Relation to Accident of Physical Defects noted in Standard CAA Examinations," point up the need for such standardization of methods and practices.

In a study based on 1286 pilots who had completed primary training and had been medically certified for secondary stage of Civil Pilot Training, medical officers of the Army Air Force examined 925 and disqualified almost half of them. The Navy physicians examined 361 and disqualified about one-fourth of the number, the report stated.

"The large difference between the Army and the Navy and the degree of disqualification of previously certified men might easily be explained if the examiners of the Armed Forces employed higher standards of qualification than had the Civil Aeronautics physicians," the report emphasized. "In the main, however, the same standards were employed in both examinations. The most important exception is vision, since here refraction was used by the Army and the Navy but not by the civil examination."

The report also comments on the wide disparity among the total disqualification rates.

"A pilot certified for Civil Pilot Training had less than an even chance of qualification if he was examined by the Army in Regions 1 or 5 while he had a 3 out of 5 chance with Army physicians in Region 7. If he was sent to the Navy in the same region his chances of acceptance were better than four out of five and in Region 2 they were as good as two out of three," the report asserted.

Criticizing such disparity of standards and practices, the report stated further: "Such differences in rejection rates among a group of pilots selected by previous medical examination is inconsistent with an objective and coordinated medical examination program.

"When we consider the individual percentages of the table it seems incredible that a cardio-vascular defect severe enough to disqualify should be found among 37 or 38 per cent (Army Regions 1 and 5) of men who had already been examined and qualified for secondary flight training. Similarly it reflects badly on standards of examination to have a difference in the measurement of visual acuity (Snellen chart) sufficiently large to qualify in one examination and disqualify in another in more than 10 per cent of the cases examined (Army Regions 4 and 5)."

A digest of all three of these reports was submitted to the Civil Aeronautics Board by Jerome Lederer, while director of the Safety Bureau. In commenting on the study entitled "Problems of Consistency in Medical Examinations for Civilian Pilots," Lederer pointed out that the report analyzed the probability that an individual who is noted as having a disability by one physician will encounter a like opinion from the next one who examines him.

Based on a statistical analysis of physical examination reports of the CAA Medical Division representing 18,400 cases, Lederer told the Board:

"Discrepancies between records of examinations which are not due to changes that have occurred in the pilot's physical condition indicate a need for standardization of examinations. There is a large range in the severity with which physicians conduct examinations and examiners are very different in the emphasis they place on various defects. Defects found to be important enough to disqualify by one physician are often not found by another. The usual order of this disagreement is that the first physician finds the defect and the examination that follows clears the pilot. A need for standardized tests and standardized methods of examination is shown."

With reference to the study on physical defects and their relation to accidents, Lederer states: "Although five years were covered in this survey and every method was taken to secure the greatest advantage of the data available, it is impossible to adduce that there is a direct relation of physical defect to accident."

In regard to discrepancies in the methods used and results obtained as between all examination physicians, Lederer stated: "One possible explanation is that the standard used by each physician is to reject a given proportion of all cases examined by him, usually on the basis of the physician's chief clinical interest and that this rejection is made irrespective of the true occurrence of the defect. If pilots are sent to enough doctors they will eventually all be disqualified. More objective and uniform standards must be developed."

Table of Defects

The following table lists the types of defects that figured in Army and Navy disqualifications of CPT pilots:

Types of defects noted as basis for disqualification*	Army % of 925	Navy % of 361
Cardio-vascular	22	12
Anthropometric	16	12
Vision other than acuity	16	11
Visual acuity	8	3
Adaptability Rating for Military Aviators (ARMA)	7	...
Teeth	7	3
Nose and throat	6	3
Nervous or psychiatric	6	2
Miscellaneous	6	3
Color vision	3	2
Hearing, eardrum, etc.	1	1
Total percent disqualified	48	28
Total number examined	925	361

Cardio-vascular, anthropometric and vision (other than color vision) defects were most commonly found by both Army and Navy physicians. Hearing, color vision and miscellaneous (hay fever, skin disease, medical history, etc.) defects were the least common causes for disqualifying.‡

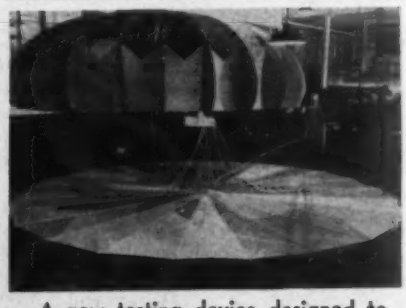
causes for disqualifying.

* Any pilot appears only once within any class of defects. That is, if a disqualification had several disqualifying cardio-vascular measures he was counted only once in the cardio-vascular defect class. However, a pilot may appear in more than one of these major classifications.

'Magic' Quilt

A quilt, which will do about everything attributed to the legendary flying carpet except whisk its owner from roof-top to roof-top, has been developed by the Army Air Forces to contribute to the safety of combat fliers. It is made of water-repellant material, weighs only 2 4/5 lbs., and is stuffed with chicken feathers. These not only give warmth, but enough buoyancy so that it can be used as a life preserver. If so used, the quilt is folded lengthwise and tied around the wearer's waist. It will sustain a man in water indefinitely.

Indoor Canopy Tester



A new testing device designed to increase the safety features of parachutes recently was demonstrated by the Pioneer Parachute Co. Pictured above, the indoor canopy tester is the first of its kind in the industry. It is capable of exerting a pressure up to 18,190 lbs. on the fabric and lines of the parachute.

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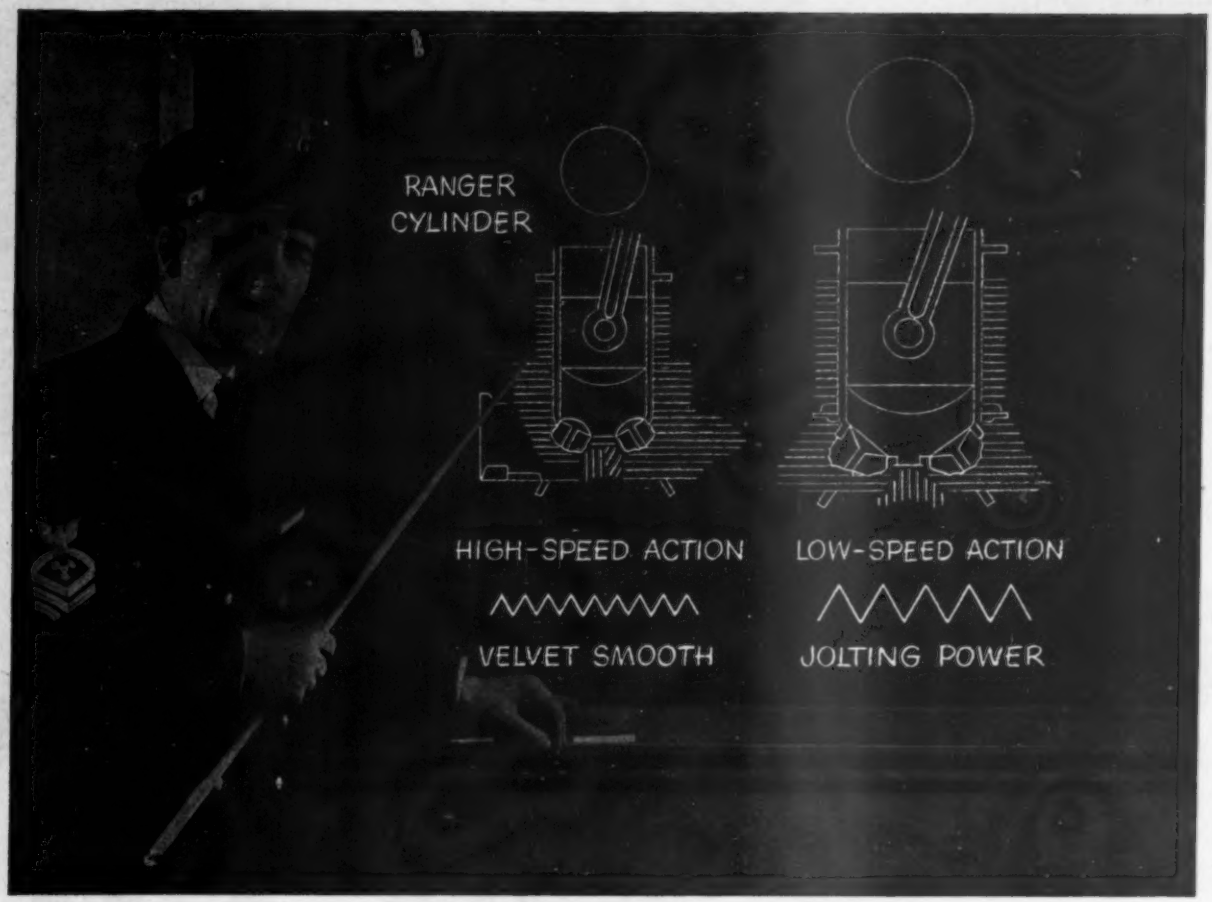

High Speed Means Smooth Power

Fairchild engineers have created a truly high-speed aircraft engine in the Ranger twelve (SGV-770-C-2).

Ranger cylinders deliver more power for their size and weight than do the cylinders of other engines in Ranger's power class.

Each piston delivers more than 1,500 power strokes a minute at take-off—a total for the twelve cylinders of over 18,000 impelling drives every sixty seconds.

They all add up to the kick of 550 horses delivered to the reduction gears that spin the propeller. The explosions in a Ranger produce power that's *velvet-smooth*—like this: ∧∧∧∧∧∧∧∧∧∧∧∧ ; instead of jolting—like this: ∧∧∧∧∧∧∧∧

This high-speed power production is possible because of the Ranger's design—design that incorporates the principle of dynamic balance in the engine, through an ingenious system of vibration dampers.

Ranger engineers pack lithe, smooth power into the sleek lines of the Ranger Twelve—another instance of how they apply the "touch of tomorrow in the planes of today."

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International Air Conventions To Date Have Failed—Warner

FAILURE of international aviation conventions to perform the function for which they were created has made it necessary for the United States to depend almost wholly on bilateral agreements in the development of international aviation, Edward P. Warner, vice chairman of the Civil Aeronautics Board, testified in a recent appearance before the Appropriations Committee of the House of Representatives.

"On the whole we have remained dependent, even for the most fundamental privileges of flying an airplane from one country into another and for the determination of almost every question that international flying raises, on special bilateral agreements," he said.

Under questioning of Rep. Louis C. Rabaut (D., Mich.), chairman of the Subcommittee on State, Justice and Commerce department appropriations Warner outlined for the committee the history of the attempts which have been made to develop the political framework on international air transportation in the western hemisphere. The first attempt resulted in the creation of the Pan-American Convention for Air Navigation drawn up at Havana in 1927. Warner pointed out that only about a dozen countries, including the U. S., had ever ratified the rules and policies adopted at this convention.

By the terms of the Havana convention, each country, Warner explained, was to adopt its own regulations and each signatory would accept the others regulations without question.

"Each country would develop its own means of traffic control, and such things as that. As time went on, it became apparent that a large measure of agreement on such technical matters was desirable, if not absolutely necessary," the CAB official explained.

Out of this need, the Lima Conference of 1936 was held and a proposal formulated for the creation of the Permanent Pan-American Aviation Commission—generally called CAPA.

"That, in turn, has gone slowly. We organized our national commission here but not enough other countries have yet done so to set up the permanent international commission," Warner stated.

"We look forward now to beyond the interlude occasioned by the war. It seems to almost everyone, I believe, to be of the greatest importance that we strive for a larger measure of international agreement on many matters that were left to drift in the past."

Warner, substituting for Chairman L. Welch Pogue, appeared before the committee in justification of the Board's budget for 1945.

$35,000,000 to CAA, CAB In New Appropriation Bill

House Appropriations Committee last fortnight reported out the 1945 fiscal year Commerce Department appropriation bill, allocating $33,884,000 to the Civil Aeronautics Administration and $1,514,000 to the Civil Aeronautics Board.

Following is the breakdown on the CAA and CAB allocations:

'Hyperventilation' Added To Pilot's Many Hazards

Add a new Gremlin to the pilot's worries—Hyperventilation.

Translated into laymen's terms, medical authorities working with CAA state that hyperventilation simply means breathing too fast. When this happens, necessary carbon dioxide in the lungs is being displaced too rapidly by oxygen.

The remedy is to slow up the breathing or, if quicker relief is desired, inhaling and exhaling into a paper sack will bring the desired results. Thereupon such symptoms as dizziness, tingling of fingers and toes, constriction of the thorax, palpitation and a feeling of suffocation which sometimes add up to panic, will disappear.

CAA has been conducting the experiments at the Mayo Aero Medical unit in Rochester, Minn., and some definite conclusions have been reached.

It has been suggested that unexplained airplane accidents might have been caused by a pilot subconsciously working himself into a panic by breathing too fast. One of the symptoms of an advanced stage of hyperventilation is a contraction of the muscles, and physicians believe that cases of a student's "freezing" to airplane controls in fear have been caused in this way.

Lockheed's 'Power Egg'

Lockheed Aircraft Corp. has designed and applied to its new four-engined C-69 Constellation a 'power egg' system, which permits a complete change of power plant in 27½ minutes. Thus a newly overhauled engine may be substituted for one approaching its air-time limit without tying up the airplane for a full day, as formerly. Designers of the 'power egg,' shown above, are Hall L. Hibbard, vice president and chief engineer, and C. L. Johnson, chief research engineer.

C-47's Carry 5 Tons

Thirty-five Douglas C-47 transport planes have made a 1,970-mile hop from Natal to Africa with loads of five tons each, Douglas Aircraft Co. has just been permitted to announce. The feat of aerial logistics was performed in the early days of the war. The planes grossed 35,500 lbs., as against the CAA's standard 25,200 lbs., believed to be a record for the C-47's.

Object	Appropriations, 1944	Estimates, 1945	Amount recommended in bill for 1945	Increase (+) or decrease (—) bill compared with 1944 appropriations	Increase (+) or decrease (—) bill compared with 1945 budget estimates
Civil Aeronautics Administration					
General administration	$ 1,800,000	$ 2,144,000	$ 2,130,000	$+ 330,000	$— 14,000
Air navigation facilities:					
Establishment of	4,797,000	3,765,000	3,765,000	—1,032,000	.....
Maintenance and operation of	21,575,000	23,855,000	23,800,000	+2,225,000	55,000
Technical development	612,000	600,000	580,000	— 32,000	— 20,000
Safety regulation	2,364,000	3,120,000	3,050,000	+ 686,000	— 70,000
Washington National Airport	505,000	559,000	559,000	+ 54,000	.....
Development of civil landing areas	9,907,000	.....	.....	—9,907,890	.....
Total, Civil Aeronautics Administration	$41,560,890	$34,043,000	$33,884,000	$—7,676,890	$—159,000
Civil Aeronautics Board					
Salaries and expenses	$ 1,214,000	$ 1,529,000	$ 1,500,000	$+ 286,000	$— 29,000
Printing and binding	12,000	14,000	14,000	+ 2,000	.....
Total, Civil Aeronautics Board	$ 1,226,000	$ 1,543,000	$ 1,514,000	$+ 288,000	$— 29,000

Airport Meeting

(Continued from page 20)

dent-engineering, American Airlines, predicted that postwar airport design will be merely "refinement and polish" of what has been done in the past. Predictions of traffic will be necessary to long-range airport planning, but making such predictions will not be easy, he warned. He also expressed the belief that a strategic airport plan, such as worked out by American, may be helpful in providing air service to the majority of the U. S. population.

For medium-range domestic airline operation, an airport should have runways about 6,000 ft. long, increasing this 2,000 ft. for long-range international operations, Foley said. In large cities, there should be room for expansion to 10,000 ft., he added.

Discussing a strategic airport plan, under which more than one city might be served from the same airport, Foley said a few of the advantages would be: enable the use of larger planes, lower costs, reduce stops, and lower overhead costs.

One of the most emphatic speeches on the program was given by Howard E. Crush, manager of Lunken Airport, Cincinnati, who had been assigned the topic, "Are the Airlines Paying Their Share of Airport Expense?" Crush asserted that it was necessary to break his subject down into two parts: (1) are the airlines paying *their* share, and (2) are the airlines paying a *fair* share of expenses. The answer to the first part is definitely no, he said, adding that "no" was also the answer to the second part, but in lesser degree.

The airlines, Crush said, could not have operated in the early days without city support. Past airport charges were "practically a gift," and some of these long-term leases and contracts are still in existence, he pointed out.

At Cincinnati, only one-third of the total airline space is available to Cincinnati passengers, and the other two-thirds contribute nothing to the city, Crush said. Taking an average fee charged the airlines of $25 per month per schedule, he pointed out that this breaks down to 3.9c per passenger per landing. Thus, when a passenger lands at Cincinnati, the city receives 3.9c, whereas the porter who "throws the passenger's bag into a taxi gets two bits," he asserted.

Cities on Short End

Carrying his point further, he said that a passenger who makes a transcontinental trip pays $138.85 to the airline. If six stops are made, the cities receive only 23.4c, he pointed out.

Crush said he did not believe that the taxpayer got enough out of an airport to be willing to make up continual deficits. Air transportation is no longer a novelty—it's big business, and airports should be on the same basis, he stated.

Alfred MacDonald, director of parks and airports at Wichita, Kansas, told the meeting that municipal taxpayers are willing to have bonds issued to finance airports. The benefits accruing to the city make the costs worthwhile. However, taxpayers are unwilling to make up annual operating deficits, and airports must be self-sustaining, he pointed out. Airports should make use of every legitimate source of income, and the aviation industry must pay its way on the basis of service rendered, he added.

Government agencies must also pay their way at airports and must not expect to receive something for nothing, MacDonald continued. He urged that local, state and federal governments participate in financing acquisition of airport sites.

At least the operating costs of airports should be "thoroughly cared for" by income, Walker Winslow, manager of the Indianapolis Municipal Airport, said, urging that "airports must be self-sustaining."

Discussing ways to improve airports and airport revenues, he said that Indianapolis definitely plans a modest 30-40 room hotel at the airport, together with shops and an excellent restaurant. He said he was "deeply ashamed" of the present restaurant at Indianapolis and added that the same applied to most other airport eating spots.

J. Kirk Baldwin, airport management consultant, CAA, said that at present no more than 15% of municipal airports are operating at a profit. He urged municipalities to present their problems to the CAA, which will be glad to assist wherever possible.

Baldwin stressed the importance of selecting a capable airport manager, pointing out that this selection can mean the difference between a successful airport and an inadequate one. He also stated that self-sustaining airports are desirable.

Donald W. Martin, manager of the City of Detroit Airport, urged managers to "merchandise the services at the airport at every opportunity," but assure "fair treatment at all times."

Listing ways that airports can obtain revenue, Martin said that "the big airport of the future must definitely go into the hotel business." Other revenue-producers suggested by Martin included storage for passengers' cars, gasoline service station, parking facilities, observation decks, sky-view dining rooms, cocktail bar, nightclubs, sale of gas and oil, travel agencies, shops, branch offices, sports, theaters, taxi franchises, baggage lockers, vending machines, hangar rentals.

Pogue

(Continued from page 19)

the war. In addition, administration would be a complex undertaking.

The Government could enter upon a policy of preserving the surplus aircraft in a separate reservoir or pool for use in a future emergency. The aircraft could be employed in catastrophe relief, for the training of the flight crews necessary for the operation of heavy equipment, or they could be rented or sold to perform approved experimental or developmental operations. While the establishment and maintenance of such a reservoir may become essential and might be of considerable value, it necessarily would involve great expenditures of public funds.

No Final Decisions Now

After studying these, and other alternatives, Pogue said, the Board concluded that no final decisions can be made at this time. Examination made it clear that too many uncertainties, having an important bearing on the problem, exist to make a practicable determination at this time. Some of the uncertainties he listed: how long the war will last; how many and what kinds of surplus aircraft we will have; how many of such aircraft might be efficiently used by our own air lines; how many should be made available to foreign air lines; what special rehabilitation, emergency, or relief measures will have to be undertaken by these transport aircraft; how soon aircraft manufacturing concerns can produce new and more modern types; the extent to which the new planes will outstrip the old; how much charter or contract service will be undertaken at the end of the war; what the international arrangements will be for controlling and regulating the volume of international air traffic, and what the volume may be.

Postwar Plans

(Continued from page 17)

tion by Senate Commerce spokesmen included the following:

1. Clark is the only Senator who has obtained a copy of the report of the Interdepartmental Committee. (*American Aviation*, December 1). This report, it is understood, among other things, endorsed the position of competition in foreign air transportation. The Commerce Committee has requested that this report be officially submitted to the Committee. It will be made a part of the record.

2. The minority report of Thomas Burke, formerly chief of the State Department's Division of International Communications and a member of the working subcommittee of the Interdepartmental Committee, which, it is reported, recommended that consideration be given to operation of a "chosen instrument" combine for a limited time after the war has not been submitted to the Commerce Committee. Last December, Assistant Secretary of State, Adolph Berle, chairman of the Interdepartmental Committee, was questioned about this minority report by Commerce Committeemen and reported that he had never seen it. *American Aviation* was told.

Defense All-Important

3. Postwar national defense policy is the fundamental policy which will determine our postwar foreign commercial aviation pattern. This means that air routes will have to be established which are not justified by economic considerations.

4. Consideration is being given to the possibility of transferring all jurisdiction over foreign routes to the State Department. The CAB now has initial jurisdiction. Another possibility for changing the machinery in Washington for handling foreign route applications is the establishment of an International Air Board, which would be equivalent to splitting the present jurisdiction of the CAB in two. The present board would continue to handle domestic route applications, and the new board would handle foreign applications. McCarran has reported that it is "highly probable" that this provision will be included in his bill.

5. Drafts of the McCarran bill have been read with interest by some Senate Commerce Committeemen.

Finish the Fight with War Bonds

Flight without Wings

There is no roar of engines when the great, gleaming fuselage of a Boeing Flying Fortress makes its first flight. Smoothly and quietly it glides above the compact rows of partly completed bodies to the final assembly line. After the overhead crane has set it down in position, the wings, tail surfaces and landing gear will be joined to the fuselage and the big bomber will be ready for the air.

Thrilling even to the uninitiated, this scene holds a far deeper significance for the trained technical man. It typifies an entirely *new development* in production engineering—a major Boeing contribution to wartime speed and efficiency.

The Boeing system emphasizes short-flow, multiple-line production. It provides maximum use of every foot of plant space. It allows for flexibility in design —vital to rapidly changing combat needs. *And it turns out planes faster.* Boeing's rate of production today is 10 times what it was the month before Pearl Harbor.

Boeing production engineers have proved that by completing each section of a plane separately, and bringing the sections together only in the last stages of assembly, both space and time are saved. After a plane receives its wings it occupies several times as much room as when it is in sections. That is why even the wiring of a Fortress is fully assembled and installed before the final joining of wings and fuselage.

Without such basic innovations in design, engineering and manufacture, Boeing could never have achieved the swiftly multiplied production that now darkens enemy skies. True today, it will be true of any product tomorrow . . . if it's "Built by Boeing" it's bound to be good.

DESIGNERS OF THE FLYING FORTRESS • THE NEW B-29 SUPERFORTRESS • THE STRATOLINER • TRANSOCEAN CLIPPERS **BOEING**

Joint Legislative Committee Elects MacCracken Chairman

WILLIAM P. MacCRACKEN, Jr., counsel for the National Aeronautic Association and former assistant secretary of Commerce for Aeronautics, was named chairman of the newly formed Civil Aviation Joint Legislative Committee last month at a meeting in Washington, D. C. John E. P. Morgan, manager of the Personal Aircraft Department of the Aeronautical Chamber of Commerce, was elected treasurer, and C. R. Mooney, of Parks Air College, was named secretary.

The committee membership includes the following associations: Aeronautical Chamber of Commerce (Personal Aircraft Committee), Aviation Distributors' and Manufacturers' Association, Early Birds, Inc., Insurance (aviation) group, National Aeronautic Association, National Association of State Aviation Officials, and National Aviation Trades Association.

The committee went on record at last month's meeting as favoring a bill introduced by Rep. Jennings Randolph (D., W. Va.), authorizing the Civil Aeronautics Administration to make a national survey on airports, with emphasis on the need for smaller fields, landing strips, seaplane bases, and airways markers, reporting back to Congress in six months. The group also voted in favor of a measure introduced by Sen. Pat McCarran (D., Nev.) providing for continuance of the Civilian Pilot Training Act of 1939, which expires next June 30, extending it to July 1, 1949.

The committee is opposed to a bill introduced by Rep. Clarence F. Lea (D., Cal.) authorizing a commissioner, with full powers under the Civil Aeronautics Board, to dispose of surplus airplanes after the war.

These three sub-committees were appointed to study the following problems:

John E. P. Morgan, Washington, D. C., chairman; Lowell H. Swenson, Minneapolis; and John H. Wilson, Lockport, Ill.—"to formulate a statement of principles to guide the parent committee in assisting in the revision of existing Federal legislation."

L. L. Schroeder, St. Paul, chairman; Frank A. Tichenor, New York City; and Reed M. Chambers, New York City—"to study state aviation laws, pending legislation, and to prepare a statement of principles applicable thereto."

C. R. Mooney, East St Louis, chairman; Arthur S. Brown, Lancaster, N. Y.; and Mr. Tichenor—"to study the problem of disposal of surplus aircraft and aeronautical facilities to conserve civil aviation enterprise."

The committee will meet again March 21, at which time the policy committee on Federal legislation will be expected to report.

Rowe Joins Howard Firm

Kenneth C. Rowe, former executive officer for the OPA in Washington, D. C., has been appointed assistant to the president of Howard Aircraft Corp., replacing Roy A. Watkins, a World War I flying ace and former production expert for the Chrysler Corp.

Cockpit Instruction Panel

This new-type instrument panel mockup, recently developed by Lockheed Aircraft Corp., is reported to be speeding up the training of combat pilots in Army and Navy training centers. Lt. Comdr. J. O. Christian, formerly of the Naval Inspection Office at Lockheed, now of the Bureau of Aeronautics, Kansas; Mac Short, vice president in charge of engineering at Lockheed Factory A; and Maurice Cleary, assistant to vice president-sales, check on its technical details.

George Report

(Continued from page 18)

to be headed by a director. It guarantees advance notice of termination to manufacturers, payment of expenses and allowances for profit on the work done on the uncompleted portion of the contract. It provides payment of 90 per cent of a contractor's claims against the government within 30 days of the termination date, but makes payment subject to readjustment of a final settlement of the claim. It removes from the General Accounting Office authority for pre-audit but permits post-audit for fraud.

Industry representatives praised the recommended method for settlement of subcontracts. The job of settling cancelled contracts "cannot be done in the way it is now being handled, within any tolerable time," the committee stated. Wherever possible they urge that prime contractors and subcontractors be permitted to file over-all claims for cancellations of all contracts. This would result in only 10% as many claims being filed as under the present method and "would enable contractors to lump inventories and indirect costs applicable to Government business and avoid the necessity of undertaking to break those items down and allocate them to individual contracts."

To settle claims on an overall basis it will be necessary for legislation to cut across the traditional concepts of appropriations to enable one procurement agency to use its funds in settling contracts let by another agency. In reverse this process now occurs in renegotiation.

In order to obtain the most rapid settlement of contracts, the George committee says the government must adopt a "different mental attitude," one which "brushes aside all obstacles to its accomplishment." Stating that "it is absolutely essential that payment be made without any delay whatsoever," the report admonished: "the traditional and entirely proper feeling that the Government's funds are sacred will result in delays that cannot be tolerated."

The committee recommends the immediate payment of the contract price for all finished goods on hand; the immediate payment of 100% of the direct cost of all inventories of raw materials and partially processed goods and as large a percentage, up to 90%, of all other items in the claim as will afford the Government reasonable protection. The procuring agencies should also be authorized to make direct termination loans to contractors and subcontractors and to make guarantees of loans by public and private financing institutions.

The report specifically advises that the Comptroller General be "relieved of any responsibility for pre-audit," which it believes is impractical and would bankrupt industry. However "every possible safeguard should be set up to punish fraud because of the necessity of relaxing the conventional preventive controls." To this end, the Office of Demobilization would be empowered to authorize post-audits for any claim in which a suspicion of fraud exists.

The Office of Demobilization will be charged with the responsibility for planning the disposal of surpluses including inventories allocable to cancelled contracts. To prevent the glutting of the

(Turn to page 45)

Ingenious Electronic Balancer Speeds Gyro Production

A dynamically-balanced, smooth-spinning gyro is essential to the precision performance of gyroscopically-stabilized instruments such as the Gyro Flux Gate* Compass and the B-3 Driftmeter. Formerly a laborious hand operation, balancing of gyros is now achieved on a mass production basis — thanks to a special dynamic balancer, designed and developed by Pioneer*. This ingenious electronic machine locates points of unbalance and marks them by means of a sparking electrode. Then, with an inbuilt drill, the vibration-causing, excess metal is removed. This dynamic balancer is typical of the devices and techniques that speed production and insure the accuracy of Pioneer Instruments. Eclipse-Pioneer Division, Teterboro, N. J.

PIONEER GYROS

...are utilized in instruments such as the Gyro Flux Gate Compass and the B-3 Driftmeter so that accurate indications will be provided regardless of aircraft pitch and roll. The instruments named, as well as many others based upon gyroscopic stabilization, are members of the "Invisible Crew" that more than 30 Bendix plants are speeding to battle fronts.

THE INVISIBLE CREW

Bendix Aviation Corporation

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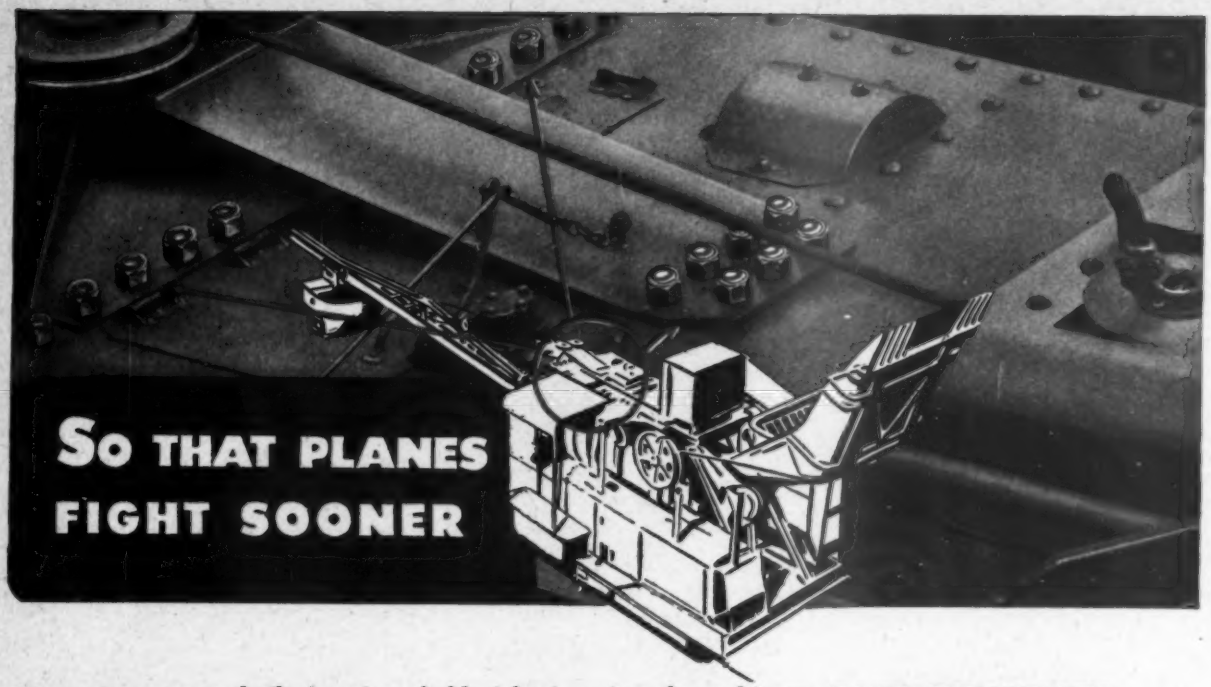

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RANSOME pavers built American highways. Now they are rushing airports along our battle fronts.

Every hour of construction time they can save gives that much advantage to our fighting airmen.

Paving is a shattering job. And it used to be accepted that frequent take-ups and tightening were part of paver maintenance.

But no more! Not since Ransome began using Elastic Stop Nuts—the nuts that stay put.

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The reason Elastic Stop Nuts hold tight in spite of wracking vibration lies in the elastic collar in their tops. This snuggles close around the bolt threads, grips them and prevents the nut from turning and loosening.

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"Concrete road pavers are subjected to tough, grueling work, especially on twenty-four-hours-a-day service, for which many Ransome Pavers have been called upon in the construction of airport runways since the war started. All told, there are about 1,200 Elastic Stop Nuts used on every Ransome Paver we build. By substituting Elastic Stop Nuts for the ordinary kind, we are helping the Ransome Paver owner minimize his maintenance job because the nuts are self-locking and vibrationproof. No time out for tightening—no extra hours of labor to take up slack. Elastic Stop Nuts also simplify our shop assembly job. They are a further contribution to the improvement of our paver, which is our constant goal."

J. J. Faber Chief Engineer

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ELASTIC STOP NUTS

Lock fast to make things last

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LOCKED ON THE BOLT BY THE ACTION OF THE GRIPPING RED COLLAR.
THE COLLAR IS ELASTIC, THE NUT CAN BE USED TIME AND TIME AGAIN.
MADE IN ALL SIZES AND TYPES—WITH THREADS TO FIT ANY STANDARD TYPES OF BOLTS.

Baruch Report

(Continued from page 18)

ventories of critical civilian items to see what can be safely released during the war for the civilian economy.

Second important phase of the report which was prepared by Baruch and his assistant, John M. Hancock, deals with settlement of terminated war contracts. In general, they advocate "quick, fair and final settlement of terminated war contracts through negotiations by the contractors and the procurement agencies."

Specifically, they believe "quick cash" is of primary importance. To accomplish this objective the review powers of the Comptroller General should be limited to fraud, the detection of which can be aided if Government negotiators keep full written records of the bases of settlement and if contractors are required to keep their records for three years. Government negotiation should be conducted by "Teams" to prevent collusion and to encourage quick and independent judgment. This would "add up to a more effective protection of the public interest than any audit before payment that the Comptroller General would find administratively practicable."

'Financial Kit'

To assure quick cash pending settlement, a complete "financial kit" is assembled in the report including:

1. Immediate payment—the full 100 per cent for all completed articles; 2. On the uncompleted portion of the contract, immediate payment—the full 100 per cent—of the Government's estimate of factual items, where proof ordinarily is simple, such as direct labor or materials and of other items on which the Government is able to satisfy itself, up to 90 per cent of the contractor's estimated costs.
3. Immediate payment—the full 100 per cent—of settlements with subcontractors as soon as approved.
4. Payment by the Government of interest on termination claims until settled.
5. As insurance against delays in validating claims, a new, simplified system of T (Termination) loans by local banks, with Government guarantees, to be available to all war contractors, primes and subs.
6. For those unable to obtain such loans from their local banks in 30 days, the Government to make the loans directly;
7. Until the new T loans are authorized by Congress, extension of V and VT loans to all eligible borrowers.
8. Finally, for hardship cases, unable to use any of the tools outlined above, expedited settlements.

The Joint Contract Termination Board at present composed of representatives of the procurement agencies should be placed on an operating basis to unify procedures and policies of all agencies. To its membership should be added the War Production Board, Comptroller General and Attorney General.

To speed the handling of subcontractors' claims, Baruch recommends that the procurement agencies be authorized by legislation to protect subcontractors in event of insolvency or default of their customers.

A standard termination article for subcontracts will be completed soon to supplement the Uniform Termination Article for prime contracts. A minimum figure should be set by the Director of War Mobilization below which "nuisance-sized" claims can be immediately validated with suitable safeguards. And finally, there should be vigorous experimentation with over-all company settlements, which, if successful, could be authorized by legislation.

Second in importance to the quick reimbursement of contractors is the removal of government property from the plants, the report states. It advocates prompt clearance of government property from private plants not later than 60 days after the filing of inventory lists, manufacturers having the right to remove and store the property earlier at their own risk.

"Our major objectives requiring legislation in connection with contract termination are met by the bill prepared by the Committees of Senators George and Murray," Baruch and Hancock state.

Senator George, author of the Postwar Planning report which would establish an Office of Demobilization believes that the Baruch report is in direct conflict on the basic issue of whether the country's economic policies should be established by executive directives or by legislation. George said the Baruch report would do the whole job by executive order under War Mobilization Director James Byrnes.

"The Senate Postwar Committee would do the job through an agency created by the Congress which would be accountable to the Executive but would be required by Congress to carry out the broad general policies laid down by it," George explained. He added that all other differences between the two reports could be reconciled "very easily."

Disagreement Shown

The disagreement between the postwar planning Senators and the Baruch unit became clear at a recent press conference when Baruch and Hancock outlined what they consider necessary legislation for the operation of their program. This includes extension of Government credit by authorization of T loans; expansion of the lending authority of Smaller War Plants Corp. to aid the reconversion of small business; and expansion of the lending authority of the Federal Reserve System to provide a permanent source of risk capital for small and medium-sized businesses. The Congress would also be called on to lessen the financial responsibility of the procurement agencies to enable them to make "on account" advances before the final settlement.

The report asks for legislative extension of the War Powers which expire in 1944: the price control law; the priorities and allocations powers of the War Production Board and the requisitioning power of the President.

It is recommended that the Surplus Administrator report to Congress as soon as possible on legislation that is needed, based on actual experience with the problems. Stating that uncertainty about postwar taxes was deterring the launching of new enterprises, the report proposed that Congress enact now for future use a postwar tax law lowering the existing tax structure but simultaneously providing for reduction of the national debt.

The new Baruch report is an overall description of the basic problems which demand immediate attention and recommendations for their treatment. Still to be worked out are policies and plans for other aspects of the termination problem, besides the already issued Uniform Article. These include the possibility of company-wide settlement procedure; settling obligations of Government to the contractor for special facilities; a standard termination article for subcontracts; a similar article for cost-plus-fixed-fee contracts; the possibilities of direct settlement of subcontractors' claims; administrative safeguards against fraud; the establishment of appeals and review procedure; also the issuance of cost interpretations and manuals of instruction. Detailed regulations for clearance of government property from plants will be issued in the near future.

"The problems that lie before us are difficult but soluble," the report concludes. "Let no one feel that precious surpluses will bear down upon us and destroy us; that vast amounts of metals, raw materials, ships and airplanes will smother us and engulf us. These are assets of tremendous value. They will be real forces not alone in making the peace but in opening to the whole world, and therefore to us, vast opportunities.

"All of the nations of the world, after the war, will be striving to raise their living standards. Without drawing upon America's productive capacity, no nation in the world will be able to do so."

George Report

(Continued from page 42)

market or the concentration of scarce goods in the hands of a few manufacturers, this office will be authorized to take immediate title to any or all inventories in the hands of manufacturers.

In its only specific withdrawal of power from the Executive, the report stated: "Authority should be expresly withheld from any agency to dispose of Government-owned plants in basic industries, where the Government holdings of these plants are sufficient for their disposal to exert a preponderant influence on the future course of that industry. In such category are airplane factories, rubber, aluminum and magnesium plants . . . The use or disposal of plants in these industries may well have to be correlated with the Nation's foreign policy and Congress should expressly legislate further in regard to them."

Finally, aircraft manufacturers praised the review and appeals procedures recommended by the committee and pointed out that for the first time the Government would be permitted to submit to an arbitrator. Although contractors will have the right to go to the Court of Claims with a suit for damages, it is believed that this method will prove too slow in most cases. Three alternatives are therefore proposed: The Government should be authorized to submit its controversies to arbitration on the demand of the contractor; umpires should be appointed by the Office of Demobilization in every judicial district; and a review board should be appointed by the Demobilization Office in Washington, with power to review any action on the part of the contracting agency in connection with its power to amend contracts without consideration.

NAL Gets Jacksonville-New York City Route

ASSERTING that the seaboard area between New York and Florida is capable of generating enough air traffic to warrant the entry of a new competing service, the Civil Aeronautics Board last fortnight awarded a certificate to National Air Lines, Inc. for a route between Jacksonville, Fla. and New York City, via Savannah, Charleston, Wilmington, Norfolk and Philadelphia. The new certificate will contain a restriction preventing National from carrying local passengers between Philadelphia and New York.

Granting of this route promises to offer a considerable degree of competition to Eastern Air Lines, Inc. Eastern had opposed the entry of any other carrier in this field on the grounds that diversion of business would seriously affect Eastern's operating revenues. In addition, Eastern was an applicant for a coastal route between New York and Charleston and it also requested an extension of its route No. 40 from Tampa to Miami, via West Palm Beach.

The Board denied Eastern's application for the New York-Charleston route but granted it the Tampa-West Palm Beach-Miami extension, with the restriction that flights between these points shall originate or terminate at Atlanta or Birmingham, Ala., or points north thereof.

With reference to the applications of Colonial Airlines, Inc. asking a route between New York and Nassau, the Board held this phase of its application should be consolidated with the Latin America-Caribbean proceeding which is scheduled to be heard May 15. That phase of Colonial's application requesting service between New York and Charleston as it may be tied up with service to the Caribbean area is not acted upon in the instant case.

The Board denied outright the applications of Pennsylvania-Central Airlines Corp. which asked a route between Rocky Mount and Jacksonville and Seaboard Airways, Inc. for routes between New York and Miami and New York and New Orleans, via several intermediate points.

Touching on the question of the need for additional competition in this area, one of the significant statements of the Board follows:

"Although the proponents of a competitive service take the position that the justification for competition does not depend upon a showing that the existing service is not good or can be made better, they contend that, because of Eastern's monopolistic control, the territory which it serves has not received adequate service. A very substantial part of the record in this case consists of testimony dealing with the level of efficiency of Eastern's service. Other parties to the proceeding have through this testimony raised questions as to (1) the adequacy of space provided by Eastern, particularly to intermediate points, (2) the adequacy of Eastern's traffic solicitation in the territory served by it, and (3) the quality of service provided by Eastern as compared with that offered by air carriers operating in a competitive field. The evidence does not establish that Eastern has failed to provide the minimum standards contemplated by the Act for adequacy of service, but it is clear from the testimony that substantial opportunity for improvement in the service of this carrier exists and may be expected to result from the establishment of a competitive service.

"Seaboard and National contend that irrespective of the adequacy or inadequacy of Eastern's service the philosophy underlying the Act requires the Board to authorize competition where there is sufficient traffic to profitably support another operation and where such competition will not be destructive."

The opinion stated that it is generally recognized that economic regulation alone cannot be relied upon to take the place of the stimulus which competition provides in the advancement of technique and service in air transportation.

"As we stated in the California North-South case there is a strong, although not conclusive, presumption in favor of competition on any route which offers sufficient traffic to support competing services without unreasonable increase of total operating cost. Whether there is sufficient potential traffic in the territory here involved must be determined from a consideration of the facts presented in the present case," the opinion stated.

The Board then reviewed the steps which Eastern has taken during the past several years to increase and improve its service between New York and New Orleans and New York and Miami. It found that there has been a substantial increase in both air and rail traffic and placed considerable import on the growing importance of Miami as a gateway to the Caribbean as bearing on a belief that this traffic will tend to increase in the postwar era.

"Data of record showing the substantial growth in the volume of passenger traffic carried by the railroads serving this territory demonstrate that the passenger potential indicated by these figures (Federal Coordinators report for 1933) has been substantially increased. The foregoing considerations lead us to conclude that there is a sufficient volume of potential traffic between New York and Florida to support, and the public convenience and necessity require, the authorization of a competing service," the opinion stated.

With reference to Seaboard's application for a route from New York to New Orleans, the Board held that Eastern does now have competition in a considerable portion of this area, that service between New York and New Orleans is now available at equalized fares by connection between American and Chicago and Southern, as well as by circuitous routes.

"We find that the public convenience and necessity do not require the establishment of a direct duplicating service between New York and New Orleans covering the same intermediate points as proposed by Seaboard," the opinion stated.

The Board held that it must interpret Colonial's application in the light of the requirement of "fair hearing" required by the statute and the Constitution.

"To award a certificate to Colonial authorizing service between New York and Florida points on the basis of the record before us would constitute a denial of that due process which is contemplated by the provisions of the CAB act to the other parties in the proceeding," the Board ruled.

Holding that PCA in the presentation of its case had argued that its proposed extensions would offer a minimum of competition to existing carriers and that later, after oral argument, the carrier had contended that it should receive a certificate which would provide competitive service between New York and Florida points, the Board contended it would have to apply the reasoning of "fair hearing" as it did with regard to Colonial and deny PCA's application.

The Board held that the extension of National's route from Jacksonville north to New York would not only strengthen a small carrier but would also provide it with access to important traffic producing centers of the North and thus enable it to carry its own through traffic from the Florida area and to share in the through traffic from the northern area.

"This objective is in accord with the specific statutory duty imposed upon the Board to regard, as in accordance with the public convenience and necessity, the encouragement and development of a sound air transportation system," the Board stated.

In granting Eastern an extension of its Route 40 from Tampa to Miami, via West Palm Beach, the Board felt it could eliminate from Eastern's service the "dead end" operation at Tampa. This would eliminate the necessity of a turn-around at that point and extend it to Miami where the company has adequate facilities for maintenance and overhaul.

Mrs. du Pont Flies Pick-Up

Mrs. Allaire C. du Pont, (center), widow of Richard C. du Pont, founder of All American Aviation's Air Pick-Up system, recently became the first woman to fly as a passenger over the pick-up route. She is pictured with Halsey R. Bazley, (left), president of All American, and Chief Pilot Thomas T. Kincheloe at Pittsburgh after the flight.

THE SIGN OF AVIATION SERVICE

Lockheed's service emblem represents a multitude of useful operations vital to wartime aviation. At the home factories it marks the big service hangars where warplanes are modified or overhauled for combat use.

In Ireland it flies over huge repair bases where thousands of Allied bombers and fighters are checked, repaired and sent back into action. In England it identifies several additional repair bases, as well as six mobile repair units—machine shops on wheels that shuttle between remote flying fields repairing damaged airplanes. Wherever American planes fly —and are kept flying—the Lockheed service emblem symbolizes skill and careful workmanship. These are the traits that two company-operated training schools teach U. S. Army and Navy ground crews.

There is a promise for the future of aviation, too, in the insignia of Lockheed service. At war's end, international Lockheed service will be available for *your* plane, wherever you may fly it. For tomorrow, as today, Lockheed will not only build the planes, but get them ready to fly, and keep them ready to fly.

LOOK TO *Lockheed* FOR LEADERSHIP

LOCKHEED AIRCRAFT CORPORATION, BURBANK, CALIFORNIA

Application for Dirigible Routes Received by CAA

ANOTHER relatively light fortnight was experienced by the CAB docket section as far as filing of new applications was concerned. From Feb. 7 to and including Feb. 21, but 18 new route requests were received.

In the group of new applications is the U. N. Airships, Inc. of Washington, D. C. which requests 41,633 miles of foreign routes over which it would fly dirigibles. It is the first application of this type on file. As far as could be learned, the individuals connected with this company have never had any previous connection with flying the lighter-than-air type of planes.

Adams Enterprise asked for routes in the Canal Zone where the company operated as a fixed base operator prior to World War I. A taxicab company in Buffalo requested a certificate to engage in a helicopter air-taxi service between the Buffalo Municipal Airport and the business section of Buffalo.

Applications follow:

Adams Enterprises

Lt. Col. John C. L. Adams and his wife, Alberta, 1218 Chestnut street, Philadelphia, filed for sight-seeing and mail and express routes in the Panama Canal Zone. They asked the following routes: In the vicinity of Cristobal, Chagres River, Madden Lake, Gaillard Cut and Balboa; Cristobal eastward along Panama coast, near San Blas Islands and return; Cristobal generally west along coast to Bocas Del Toro and Almirante and return and area near Balboa, past Perlas Islands to San Miguel Bay and return. Applicant points out he and his wife operated a sales, maintenance, pilot training and charter service in Panama from 1939 to 1941. The partnership will be continued under the name of Adams Enterprises in Spanish America (AESA). Company would use helicopters, and light land and sea planes. (Docket 1304)

Alaska Star Airlines, Inc.

Smith W. Purdum, Second Assistant Postmaster General, has filed an application requesting the Board to issue a certificate of public convenience and necessity to Alaska Star Airlines for the transport of mail between Fairbanks, Anchorage, Homer and Kodiak. The present contract held by the company expires Feb. 29. (Docket 1315)

Aviation Enterprises, Ltd.

This company, of Houston, Texas asks for a temporary certificate to be followed later by a permanent certificate for air transport of persons, property and mail between Brownsville and El Paso, via Harlingen, McAllen, Laredo, Eagle Pass, Del Rio, Marfa and Van Horn. Applicant proposes to use multi-engine planes. (Docket 1299)

Bekins Van Lines Co.

Applicant of 1335 South Figueroa Street, Los Angeles, Cal., asks a certificate for non-scheduled air transport of household goods and allied commodities between points and places in the U. S., Alaska, Canada and Mexico. Applicant proposes to use single and multi-motor freight and cargo land planes. (Docket 1298)

Central States Aviation Corp.

Ryal Miller, President of this company located at Sioux City, (3), Iowa filed for a route between terminal points Hastings, Neb. and Rochester, Minn. via Grand Island, Norfolk and Wayne, Neb.; Sioux City and Spencer, Iowa and Albert Lea, Minn. Applicant asked for a certificate for air transport of persons, property and mail and would use single and multi-engine equipment. (Docket 1320)

The Dayton Co.

This department store of Minneapolis, filed for a number of helicopter routes for carrying passengers, property and mail between Minneapolis and 12 other terminals in Iowa, Minnesota, Wisconsin, North Dakota and South Dakota. Company proposes to land on roofs of its stores or in 100 feet square areas adjacent to its stores. (Docket 1305)

Desert Airways, Inc. Ltd.

This company of Vail Field Airport, Los Angeles 22, Cal., filed for an air transport route to carry passengers, mail and goods between Las Vegas, Ely, Reno, and Carson City, Nev. The application was filed by W. H. Coffin, president, and the applicant proposes to use Waco, Stinson and Beechcraft planes until multi-engine equipment is available. (Docket 1308)

Empire State Airlines

This applicant of 60 East 42d Street, N. Y. filed an application for five air routes over which it proposes to transport passengers, mail and property between New York City, Syracuse, Buffalo, and Jamestown, via various intermediate points. The company proposes to use six twin-engine Beechcraft, eight-passenger, two-pilot planes and three or four Stinson Reliant Gullwing five-passenger planes. Roy H. Jonassen is president of the company. (Docket 1301)

Aloysius J. Fahey

This individual of 908 Delafield Pl., N. W., Washington, D. C., asked for two routes between Washington and Ocean City, one via Annapolis, the other via Chesapeake. It is proposed to serve several intermediate points on each route, including Rehoboth, Del. Applicant would use helicopters and asks the Board to designate landing places in Washington, such as the vacant area adjacent to the Union Station or the parking lot across from the Department of Commerce building. (Docket 1310)

John W. Foreman

This applicant of Pocatello, Idaho, filed for three additional routes for transport of passengers, air mail and express between terminal points — Chicago-San Francisco, Burns, Ore., to Seattle and Pocatello to Los Angeles. Applicant proposes to use Douglas DC-3 type equipment. (Docket 1303)

Hylan Flying School

This fixed base operator of Rochester Municipal Airport, Rochester, N. Y., has filed an amendment to an earlier application wherein it requests the Board to issue a certificate for the air transport of persons, property and mail in scheduled operations rather than non-scheduled operations as was originally requested. The applicant requests 15 routes in New York state. (Docket 1297)

Neptune Storage Inc.

This company of 369 Huguenot St., New Rochelle, N. Y., filed for a certificate to engage in non-scheduled air transport of all forms of household goods and store fixtures between all points in Massachusetts, Connecticut, Rhode Island, New York, New Jersey and Pennsylvania, and all points in the 48 states and District of Columbia. Applicant proposes to use six cargo planes and six helicopters, the latter for pickup operations. Ben F. Kirschenbaum is vice president and secretary of the company, which is now engaged in motor transport of household goods. (Docket 1317)

Leon W. Schwarck

Applicant of 214 Goliad St., San Antonio (3), Texas filed for a circular air transport route between San Antonio, Kerrville, Junction, Sonora, Ozona, Ft. Stockton, Del Rio, Uvalde and San Antonio—a distance of 608 miles. The applicant desires to transport mail and passengers in multi-engine equipment. (Docket 1316)

South Suburban Safeway Lines, Inc.

This company of Harvey, Ill., filed an application for 11 routes for air transport of persons, property and mail between terminal point Chicago and terminal points, Cairo, St. Louis, Centralia, Jacksonville, Mo., Cedar Rapids, Dubuque, Milwaukee and between terminal points: St. Louis-Cairo; Decatur-St. Louis and Ottawa-Springfield and scores of intermediate points. Applicant proposes to use four or five-place, single engine Waco, Stinson and Howard and twin-engine Cessna, Beech and Lockheed planes. The company now operates motor buses. Communications should be sent to Paul N. Dale, attorney at law, 134 N. LaSalle St., Chicago (2), Ill. (Docket 1302)

Springfield Flying Service, Inc.

This company of Municipal Airport, Springfield, Mo., filed for a certificate for air transport of passengers, mail and property in local, feeder and pickup operations over six circular routes between Springfield, Mo. and scores of cities in Missouri, Arkansas, Tennessee, and Oklahoma. James C. Johnson, is president of the company and W. Haley Reed, 1414 Insurance Exchange Building, Kansas City is counsel for the applicant. (Docket 1319)

U. N. Airships, Inc.

Applicant of Munsey Building, Washington, D. C. has filed an application for 41,633 miles of foreign routes. The company proposes to use dirigibles with 10,000,000 cubic feet capacity. R. C. Phillips, Jr., vice president of the company, filed the application. Routes asked are from Washington to terminal point, Buenos Aires, via Rio de Janeiro; Washington to terminal point Calcutta via Dakar, Capetown and Zanzibar; Washington to Moscow, via Glasgow and Washington to Brisbane, Australia, via Los Angeles, Honolulu, Chungking and Darwin. The company requests a certificate to carry passengers, property and mail. (Docket 1306)

Van Dyke Airport Service

An air-taxi service between points in the business and metropolitan area of Buffalo and the Buffalo Municipal Airport is proposed in an application filed by the Van Dyke Airport Service, Inc., New York Cen-

(Turn to page 52)

The B.F. Goodrich Airplane of the month

PIPER "GRASSHOPPER"

Far cry from the helpless balloons of the last war, this war's "eyes of the artillery" are highly maneuverable radio-equipped Piper "Grasshoppers." Wartime version of the famed Piper "Cub," it carries keen-eyed observers right over enemy positions where they can call the shots and get them on the target fast. These "flying jeeps" get under cover fast, too, when the occasion arises. The ability to set down on a small field or on a highway is just one of this versatile little plane's *big* advantages. And artillery spotting is just one of its many *big* war jobs.

B. F. Goodrich—makers of Airplane Silvertowns, Expander Tube Brakes, De-Icers, Bullet-Sealing Fuel Cells and many other essential aircraft products—salutes the men and women of Piper Aircraft Corporation who build the "Grasshopper"—our choice as "Plane of the Month."

In war or peace

B.F.Goodrich

FIRST IN RUBBER

. . . . PROGRESS REPORT ON AIRPLANE TIRES OF SYNTHETIC RUBBER . . . . .

The use of synthetic rubber has now been extended to airplane tires in all sizes and for nearly all types of service. A concise report on how these tires compare with natural rubber is not practical, because the proportion of synthetic varies from size to size. In some tires 70% of the rubber used is synthetic; in others only 35%. All-synthetic test tires have been made. The conversion to synthetic rubber was first limited to substituting synthetic rubber in the tread stock, and this was followed in many sizes by using increasing amounts of synthetic rubber in the carcass as well.

Airplane tires have some inherent qualities that make them more easily adaptable to synthetic rubber than tires for other types of service. For example, airplane tires have been held to a minimum thickness of carcass and tread, in the interest of weight control, and this has proved an advantage in controlling the greater temperature rise in synthetic rubber tires.

As tires for the various services have been released, their dependability and safety, under proper care, has been assured by exhaustive laboratory and service tests. Their service life, on the other hand, is not so easily determined. Only months of record-keeping and careful checking can provide the accumulation of evidence necessary to evaluate synthetic tires in terms of life expectancy. Reports from early airline tests are indicative of what may be expected, however, and performance figures so far accumulated do not show any radical modifications in such important qualities as tread wear, bruising, cutting resistance and weight.

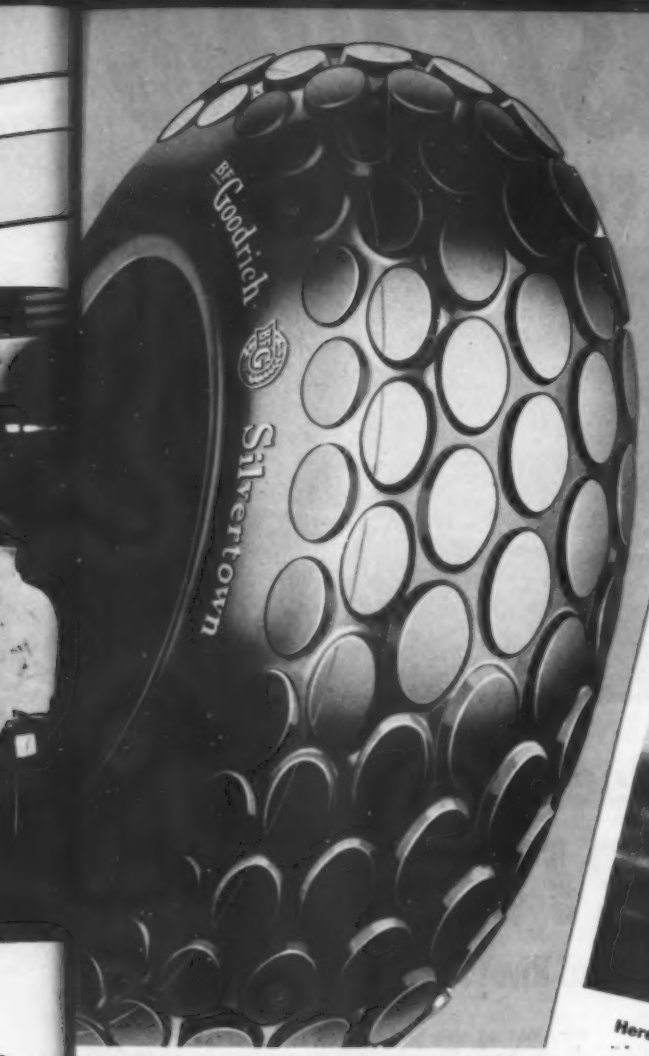
The B. F. Goodrich log of experience in synthetic materials covers years of research and leadership in the development of many special-purpose rubbers. In June, 1940, passenger car tires in which more than half the rubber was B. F. Goodrich synthetic (Ameripol) were sold to American motorists. These were the first synthetic rubber tires offered for sale in America.

This background of experience, along with reports on both laboratory and field tests on airplane tires, led to the approval, by the Civil Aeronautics Administration in March, 1943, of synthetic B. F. Goodrich Silvertowns for commercial air lines.

MAKERS OF B. F. GOODRICH TIRES AND OVER 80 RUBBER AND SYNTHETIC RUBBER PRODUCTS FOR AIRPLANES

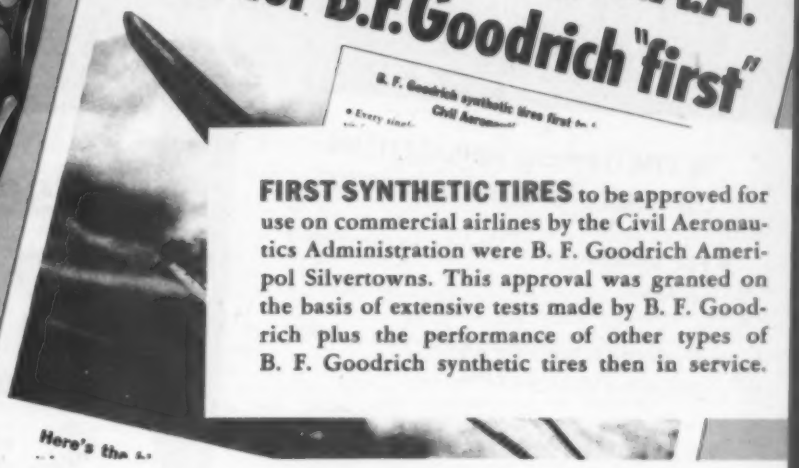
ARMY E NAVY

Awards to 9 plants



NEW SYNTHETIC RUBBER BOMBER TIRE with unusual non-skid tread design. This is one of many types of all-synthetic or partially synthetic tires now coming off B. F. Goodrich production lines.

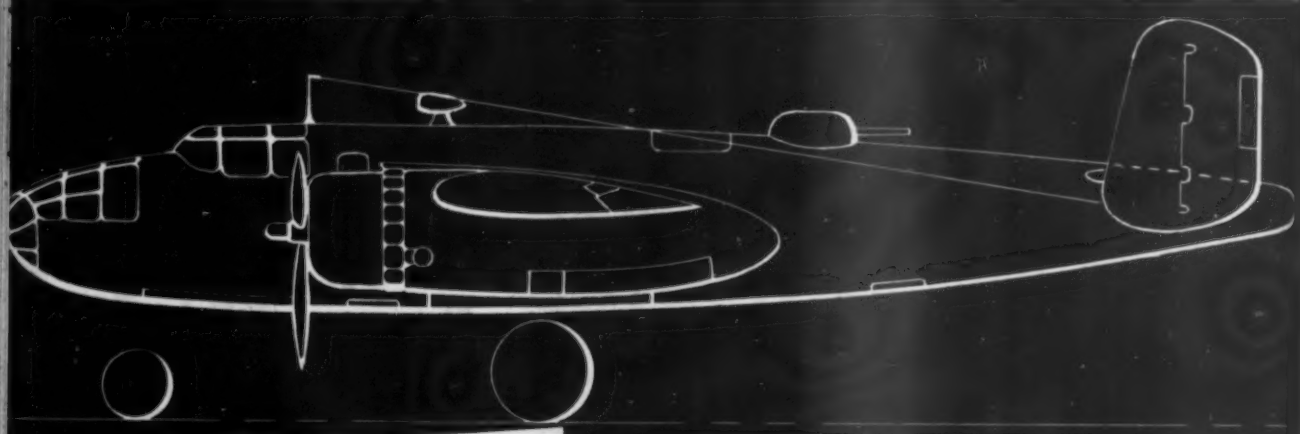
SYNTHETIC TIRES for planes OK'd by C.A.A. Another B.F.Goodrich "first"



FIRST SYNTHETIC TIRES to be approved for use on commercial airlines by the Civil Aeronautics Administration were B. F. Goodrich Ameripol Silvertowns. This approval was granted on the basis of extensive tests made by B. F. Goodrich plus the performance of other types of B. F. Goodrich synthetic tires then in service.

OUR TORTURE CHAMBER TESTS help tell in advance how synthetic rubber tires will perform in service. The huge road wheel on the machine at the left simulates landing and take-off speeds up to 150 miles per hour. The number of landings of given loads at various speeds can be determined here with considerable accuracy. Below is a test for bruise-resistance.

For FASTER FASTENING
from nose to tail



A FEW TYPICAL APPLICATIONS OF THESE UNIQUE FASTENERS

- For attachment of plastic in nose and turrets.
- In cloth-covered wings, ailerons, rudders, elevators and trim tabs.
- Fastening fillets and fairing.
- Fastening flooring in plane or on work platforms.
- Fastening bonding wires.
- Fastening clips, brackets, etc. for conduits.
- Attachment of insulation and upholstery.
- Building light frames.
- Spacers for soundproofing and insulation.

Use B. F. Goodrich *RIVNUTS*

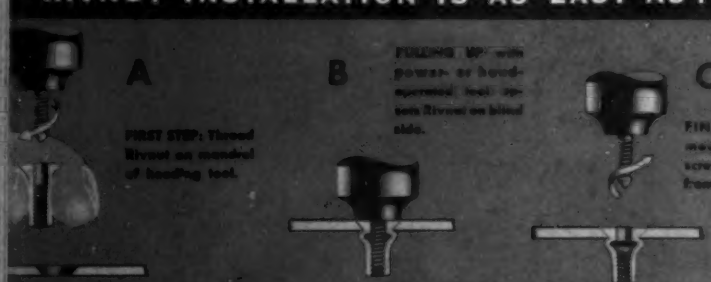
as Blind Rivets or Nut Plates or both!

The list at the left points out a *few* of the places B. F. Goodrich Rivnuts can be used to speed airplane assembly and cut costs. There are many more. In fact, on acquaintance with this unique fastener, you could probably make a new list of uses just as long for your own assembling operations.

Rivnuts combine light weight with strength; simplicity of design with low cost; easy installation with efficient performance. They have a wider bearing area than any other blind fastener, yet are compact and fit a smaller hole. All these advantages, and many others, can work to *your* advantage in airplane construction.

Our manufacturing capacity has been expanded so that we can fill all normal orders without delay. Get complete facts now by writing to The B. F. Goodrich Co., Aeronautical Division, Akron, Ohio.

RIVNUT INSTALLATION IS AS EASY AS . . .



In war or peace

B.F.Goodrich

FIRST IN RUBBER

Recording of Airline Pilots' Conversations Discussed

By GERARD B. DOBBEN

THE SAFETY BUREAU of the Civil Aeronautics Board and the Air Carrier Division of the Civil Aeronautics Administration are giving some thought to the possible use in the pilot quarters of air transport planes of a wire recording device which will enable pilots to leave a record of their conversations and actions and all radio messages received when their craft is in difficulty, especially before an impending accident.

While possible use of this recording instrument is merely in the unofficial, discussional stage, these CAB and CAA officials pointed out that any serious thought of its use would necessarily have to center around a determination to keep pilot conversations strictly private. In order to accomplish this, the pilot would have absolute possession of the recording as long as he lived. In case of the death of both pilots, then only would the government officials have authority to "play back" the recording for the purpose of obtaining such information as might be helpful in determining the cause of the accident.

It was pointed out that information from the pilot as to the trouble he is experiencing before a plane crashes might be the means of avoiding future accidents, with the consequent saving of life. It is believed that such a record of pilot reactions would have a tendency to eliminate some of the mystery which has cloaked the cause of some airline accidents, particularly where Safety engineers were not able to find the portions of a wrecked plane which are vital in making a determination. In cases where accidents are caused by icing of the wings, many times weather changes have obliterated the evidence by the time inspectors could reach the scene and a recording of the nature of the difficulties being encountered would be invaluable.

All transport planes now have a device which records on a graph the instrument panel action of the pilot and plane. This record shows the time, altitude and whether the plane is being flown by the autopilot. It also supplies certain other information which has proved important in assessing the causes of accident.

The wire recorder is a comparatively new device in aviation circles. It was developed by CAA primarily for use in eliminating faulty instructional methods in the training of pilots. By recording the conversation between instructor and pilot, CAA officials were able to eliminate faulty methods or weed out incompetent instructors. Production of the recorders is now going to the Army and Navy and as a result, the instruments probably will not be available for civilian use until after the war.

The device records on a steel wire only four-thousandths of an inch in diameter the conversation between pilots or between pilots and instructors. The wire runs approximately five miles to the pound and two hours of material can be recorded on a single pound. The wire can be used over and over again.

By putting this asbestos encased recorder in the tail of the plane, it would likely be preserved in case of crashes where the front end of the plane is usually the most seriously damaged. The original cost of making the installation would be small and the upkeep relatively inexpensive.

"It can easily be seen what an advantage such a record would be in the investigation of some recent crashes which have afforded so few clues as to cause," one official commented. He suggested further that the recording device could be constructed in such a way as to enable the pilots, by pushing a spring button, to talk privately when they did not wish to have their conversations recorded. Under the present set-up, a pilot must hold the microphone in one hand, keep pressure on a contact button, when he sends a message. It is obvious that when a ship is in distress, both pilots have both hands engaged in trying to keep it aloft, therefore cannot relay any message to control towers as to what is happening.

Three American Airlines Men Revealed as Authors

American Airlines announces that three of its personnel recently have completed books related to aviation. Colin H. McIntosh, chief navigator, has just finished the text on *Long Range Flight*. Considered an authority on this subject he was navigator for the American Airlines crew which flew the first C-54 across the Pacific to New Guinea, and was on the airline's first flights to India and Greenland.

The *Pilots Technical Manual* by Dixon Speas, assistant to the vice president of engineering of American, was the official selection of the Airlines War Training Institute and recently has been republished by McGraw-Hill under the title, *Airplane Performance and Operation*.

Ernie Gann, American pilot since 1939 and now flying on the transatlantic routes which the company is operating under contract to the Air Transport Command, has just turned in the manuscript of *Position Unknown*, a fictionized story of his experiences in the north country for ATC.

CAB Calendar

Mar. 10—Hearing on Braniff's application for a stop at Lubbock, Texas on its Route 15. (Docket 505).

Mar. 15—Hearing on proposal to increase take-off and landing rights of special types of transport planes.

Apr. 1—Hearing on application of TWA for stops at Joplin, Tulsa, and Oklahoma City between St. Louis and Amarillo on Route 2. (Docket 413). (Tentative).

Apr. 1—Hearing on applications of Mid-Continent, Delta, National and Kansas City Southern involving service between Kansas City and New Orleans. (Docket 670 et al). (Tentative).

May 1—Prehearing conference on applications of Hawaiian, TWA, Matson Navigation Co. & Northwest for routes from Los Angeles, San Diego, San Francisco, Portland, Seattle to Honolulu. (Docket 851 et al).

May 15—Hearing on Latin America-Caribbean applications. (Docket 525 et al). (Tentative).

American's New Terminal at Fort Worth Opens Gate to Mexico; Cost $25,000

An indication that any inland city in America may become an international port of entry is seen in the completion recently of American Airlines' International House at Meacham Field, Fort Worth, Tex. In this new stucco structure, which cost $25,000, international air passengers, mail and express, bound to or from Mexico, are cleared. The building contains two attractive passenger lounges and an international ticket counter with specially-trained Spanish speaking agents. It also houses U. S. Customs, Immigration, Public Health Service, Office of Censorship, Department of Agriculture, and American Airlines' International Express Service offices.

Receive New PAA Appointments

McVitty — La Porte — Gray — Elebash

A streamlining of administrative functions within the Atlantic Division of Pan American Airways has been announced. At the La Guardia Field base, operations, maintenance, meteorology, and communications departments have been consolidated under the direction of Capt. Harold E. Gray. Edward W. McVitty, division engineer since the Atlantic Division was created in 1937, will relinquish this assignment to devote full time to his duties as assistant division manager. Capt. A. E. La Porte has been appointed to the newly created post of chief flight officer, and will be principal staff representative of the division operations manager. Albert P. Elebash, formerly assistant division engineer, will take over the top engineering position in the transatlantic operations.

6 Airlines Seek Routes In Oklahoma City Area

ANOTHER hotly contested inter-airline battle for routes is in the record and two examiners—Berdon M. Bell and Barron Fredricks—are today engaged in writing a report and recommendations to help guide the Civil Aeronautics Board in reaching the final decision.

The routes asked for are in the Oklahoma City area and an entire week was used by the six airlines in presenting their case. The companies involved were: American Airlines, Inc., Chicago and Southern, Eastern Air Lines, Inc., Delta Air Corp., Continental Air Lines, Inc., and Braniff Airways, Inc. TWA and National were intervenors in the case.

'Skip-stop and Non-stop'

Based on a desire to improve its transcontinental air service, American asked to serve Lubbock, Wichita Falls and Fort Smith. While a non-stop hearing may be required later, American witnesses—A. N. Kemp and Charles A. Rheinstrom—told the hearing that American proposed to serve these cities on a skip-stop and non-stop schedule. It was pointed out that if American could route some of its flights from Oklahoma City either through or over the new cities asked, thereby eliminating the Fort Worth-Dallas stop on some trips, it could shorten its transcontinental route between Washington and Los Angeles by 80 miles, its route via Chicago by some 200 miles.

"If our applications were granted, they would serve the dual purpose of improving transcontinental air service, bringing additional service to additional communities and making transcontinental service available to communities which heretofore have not had good direct service in a transcontinental sense," Kemp said.

Enlarging on American's philosophy regarding the development of aviation, Kemp said: "It is CAB's responsibility to encourage and see to the expansion of air transportation to the end that proper service is given to the people of the United States. With that in mind we had felt that not only the so-called large lines but as well the so-called small lines should be carefully expanded."

Rheinstrom under direct questioning said that American felt that there might be room for two carriers—a transcontinental and regional—in the area where American sought new stops.

Public Counsel Vernon C. Kohlhaas told Examiner Bell he did not feel that the Board, if it should approve American's application, could at the same time authorize certain non-stop operations. He said the Economic Regulations required a separate non-stop hearing.

TWA, as intervenor, and Continental as an applicant for two alternate routes between Tulsa and Memphis, one via Muskogee, Ft. Smith and Little Rock, the other via Joplin, Springfield and Jonesboro and still another segment between Tulsa and Hobbs, via Shawnee, Oklahoma City, Lawton, Wichita Falls and Lubbock, strenuously oppose the application of American.

"TWA is the operator of the central transcontinental and it is hemmed in on the north by United and on the south by American. Despite TWA's shorter route between New York and Los Angeles, it has been unable to control the distribution of transcontinental traffic because of the dominance of American in the east and United in the west" testified Charles L. Gallo, assistant to the Traffic Vice President of TWA.

Gallo said the approval of American's application would seriously affect the future of TWA as a carrier operating in the public interest. He said American's application represented probably the greatest potential traffic diversion ever involved in a proceeding before the Board.

There was some dispute between TWA and American witnesses over mileage saved on American's proposed Washington to Los Angeles route. American officials computed the saving at 83 miles, TWA at 112.

Terrell C. Drinkwater, president of Continental, again emphasized that his company was a regional carrier, that it viewed its function as the collecting and distributing of passengers to and from major junction points served by the transcontinental carriers.

"Continental is the only applicant in this proceeding which is not presently being paid for the carriage of mail on a compensatory basis," Drinkwater stated. He contended that American had gone far afield of its function as a transcontinental in "dipping into local business which should be reserved for local carriers."

Drinkwater Cross-Examined

Hamilton O. Hale, American counsel, cross-examined Drinkwater for a considerable period on a proper definition of the term "Regional carrier." In his attempt to justify such a designation as applied to Continental's operations, Drinkwater said his company was operating in what the Coordinator of Transportation had defined as the "Southwest Region."

Hale asked Drinkwater if a Regional carrier may operate in a number of regions. Drinkwater said he thought it was possible. He said Delta and Braniff operated in different regions.

"What I would like to know is whether 'Regional' is a type of service or merely a stepping stone to expansion," Hale asked. Drinkwater countered by saying that his company conceived its pattern of operations to be in what the Coordinator of Transportation has defined as the Southwest region.

Charles E. Beard, vice-president of traffic, was the principal witness for Braniff. His company asked for routes between Denver and Atlanta, via Shawnee, Tulsa, Muskogee, Fort Smith, Little Rock and Memphis. Beard said that his company's application was filed to provide three particular and specific types of air transportation services over the general route between Denver and Atlanta.

He said the first was to provide air transportation between Oklahoma City and Tulsa and Memphis, the second to provide local transportation between Memphis and Atlanta and the third to provide service between Denver and the general Colorado area and Atlanta. Questioned by Gerald P. O'Grady, company counsel, Beard said Braniff would be willing to abide by whatever decision the Board might make with reference to the restriction on Eastern's service to Birmingham.

One of the other spirited fights in this proceeding was between Delta and Eastern. Delta asked a route between Birmingham, Tupelo, Memphis, Little Rock, Ft. Smith, Muskogee, Tulsa and Oklahoma City. Eastern opposed strenuously the portion of the route between Birmingham, Tupelo and Memphis. Eastern in this proceeding sought to have the restriction removed whereby the carrier may serve Birmingham only on flights originating north of Washington, D. C., and south of New Orleans. At present Eastern is serving Birmingham on turnaround schedules but this is a temporary lifting of the restriction due to war necessity.

Memphis 'Belongs to Us'

"We have always, at least for many years, looked upon Memphis as definitely belonging within the territory we should serve," C. E. Woolman, vice-president and general manager of Delta testified. Woolman told the hearing that Delta had asked to serve Memphis as far back as the time that the Post Office department had charge of the airmail.

Woolman said that operating this route as applied for would be virtually an offline operation between two terminals serving a different but similar set of cities.

"We also feel that for anyone else to operate this route would jeopardize a very large percentage of the potential and actual passenger business over most of our Route 24," he declared. He contended that when Eastern obtained the Birmingham stop, with the origination restriction, it agreed to stay out of the local field. He definitely opposed lifting permanently the restriction with reference to Eastern's service of Birmingham although he stated Delta had not opposed lifting the restriction for war time purposes.

E. Smythe Gambrell, Eastern's counsel, grilled Woolman for more than two hours on all phases of Delta's operations and sought to bring out that the economic status of the territory did not warrant such an extension of service as requested by Delta. Some testimony was introduced with reference to the fact that Eastern had abandoned services at Birmingham and Gambrell, through questioning, sought to have the record show that the reason was due to a lack of navigational aids between Birmingham and Montgomery.

Gambrell also got into the record that when the restriction regarding Eastern's service of Birmingham was instituted, Delta had only 1,088 miles of route while today it had approximately 1,800 miles. He attempted to show by these figures that Delta was in a much stronger position financially today than when the restriction was originally imposed.

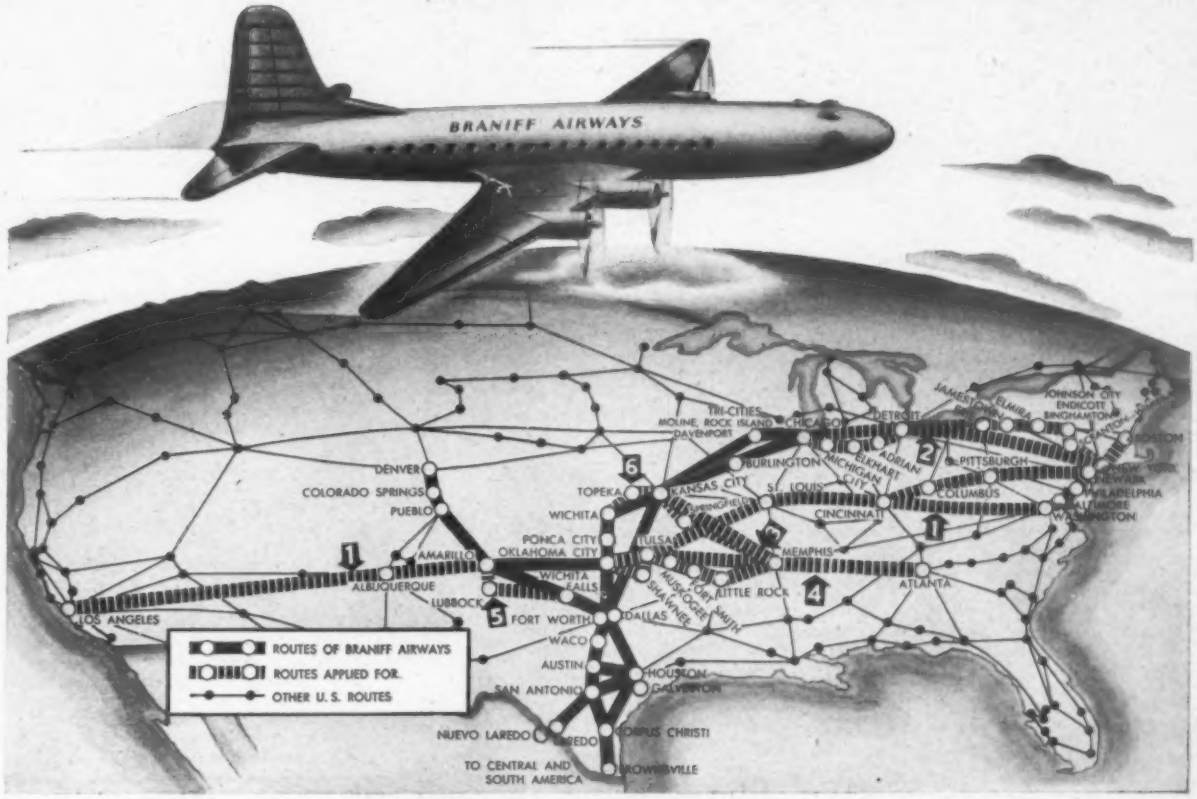
J. W. Moore, assistant secretary and treasurer of Eastern, testified that lifting of the restriction at Birmingham would enable Eastern to operate from Memphis to Atlanta or from Atlanta to New Orleans on a turn around basis or from New York or points south of New York

(Turn to page 52)

To Better Serve
THE PUBLIC CONVENIENCE AND NECESSITY

In creating the Civil Aeronautics Act of 1938, the Congress of the United States provided for nation-wide extension of the benefits of air transportation. It stated that there should be considered "as being in the public interest, and in accordance with the public convenience and necessity . . . development of an *air transportation system* properly adapted to . . . the needs of the . . . domestic commerce of the United States."

In keeping with this thought, Braniff Airways has planned and presented to the Civil Aeronautics Board for its consideration extension of its existing routes so as to provide an *air transportation system* devised to make available through-plane, one-company air service between the Central and Southwest and their economic, social and cultural neighbors.



BRANIFF'S PROPOSED DOMESTIC ROUTES

1. BOSTON-LOS ANGELES—a new cross-country route—shorter than any route now in existence and providing transcontinental air service to cities not now so served.

2. CHICAGO-NEW YORK—providing air service between the industrial Northeast and the vital markets of the Central and Southwest.

3. KANSAS CITY-MEMPHIS—a shorter line serving better the Kansas City area and the deep South . . . a new shortcut to and from Florida.

4. OKLAHOMA CITY-ATLANTA—a new Northwest-to-Southeast route connecting Colorado and the deep South, surmounting that great natural barrier, the Mississippi River.

5. LUBBOCK AS INTERMEDIATE POINT—connecting the markets of the Texas Panhandle—making all the Panhandle more easily accessible by air.

6. TOPEKA AS INTERMEDIATE POINT—designed to eliminate the isolation of Topeka and to connect it by air with Chicago and the East, as well as the Southwest and Latin America.

BRANIFF AIRWAYS

Counsel for Three Airlines in Debate Over Topeka Area

Counsel for three airlines debated the question of whether local or transcontinental air service would best serve the Topeka, Kan., area during a recent argument before the Civil Aeronautics Board. The applications involved service to Topeka, Salina and Hutchinson.

Argument centered principally about the report of CAB Examiner Lawrence J. Kosters who recommended that Continental Air Lines be given a route between Hutchinson and Salina, thereby connecting its parallel east-west routes. Examiner Kosters recommended that the applications of TWA to serve Topeka, Salina and Hutchinson and Braniff to include Topeka on its Route 9, between Kansas City and Wichita be denied. V. Rock Grundman, public counsel, agreed with Examiner Kosters with respect to Continental and the denial of TWA but contended that Braniff's application for the stop at Topeka should be granted.

Harry W. Colmery, representing both the city and Chamber of Commerce, of Topeka argued in behalf of a through service for the State Capital. He said that on the basis of the examiner's recommendation Kansas City would be the dead-end of the route. He listed scores of state, federal and mercantile agencies and organizations located at Topeka which he contended gave the city a community of interest with distant points, such as Chicago, Washington, New York, etc., and therefore required one-carrier through service.

Gerald O'Grady, counsel for Braniff, argued that the greatest amount of new public service could be obtained only by granting Braniff's application. He contended that service between Topeka and Wichita over Braniff's proposed route would be reduced to 57 minutes while by Continental's more circuitous route, it would entail nearly 2½ hours of lapsed time. He said Braniff's proposed service would have little diversionary effect on Continental, and could be inaugurated at little expense.

Arthur P. Lawler, counsel for TWA, told the Board the crux of the case was which service will be most in the interest of Topeka.

"This leads directly to the conclusion that TWA's service should be authorized because Topeka, as the capital of the State of Kansas, and a city having a generating area population of more than 180,000 persons, is entitled to a direct trunk line service to the other large cities with which it has the principal community of interest. And most important, it is entitled to a direct service to the Nation's capital, which TWA alone can provide," Lawler stated.

Dividing the present air transport field into three strata, Terrell C. Drinkwater, of Continental, told the Board that his company, as regional carrier, stood to be squeezed between the so-called Big Four and that "about to be born baby"—the Feeder Air Carrier. In this case, he said the Board has an opportunity, by granting Continental's application, to give Kansas and its State Capital a good local and state service as well as a means for connecting with the through carriers at specified points. At the same time the Board would be helping a regional carrier to get on a self-sustaining basis, he said.

Indicating a possible trend in the Board's thinking, Member Harllee Branch asked Drinkwater that since it obviously was impossible to certificate all points in the U. S. for one-carrier through service, hence did he not think that interchange of equipment might be the logical solution. Drinkwater said he felt this was a coming certainty, that the problems could be worked out if a conscientious effort was made to do so.

UAL Announces Aviation Scholarship Grants for Coming Summer Sessions

Approximately 45 colleges and universities throughout the country are being given scholarship grants by United Air Lines for use at their summer sessions in furthering improved aviation instruction, according to an announcement by W. A. Wheatley, director of United's school and college service.

The scholarship activity, Wheatley said, is an expansion of a program started by his company in 1942 and is a part of the nationwide movement to educate youth for the "Age of Flight." He declared that the scholarships will be used to assist teachers in studies of aviation in all its phases and in devising better methods for aviation instruction.

Seek Routes

(Continued from page 50)

to Birmingham on a turn around basis. Such an arrangement, Moore said, would enable Eastern to operate one plane service between Chicago and New Orleans or St. Louis and New Orleans.

Chicago and Southern was in this case on the basis of its application requesting the Board to make permanent its temporary certificate to stop at Little Rock. Asked by Counsel H. R. Bolander, Jr., whether he felt peace time need for air transportation would warrant continued operations there, Ralph L. Heininger, general traffic manager, replied: "I think there is no question about that. It is almost pathetic to see the way we have to turn down business at Little Rock right now." He indicated that if his company had the equipment, it could carry many more passengers than are carried today.

More than a dozen city witnesses occupied the stand during the entire first day of the hearing. Some of these cities submitted elaborate data and exhibits in support of their contention that additional air transport service was needed for their communities.

PCA Pilots Reunited in Service

Three former Pennsylvania-Central Airlines pilots, now in the Army Air Forces, have been reunited at the Romulus Air Base, Romulus, Mich. Shown with Marion McClintic, chief hostess of PCA's Western Division, they are Capt. Richard M. Husted, Maj. James B. Fornasero, and Maj. Keith G. Cantine.

Applications

(Continued from page 48)

tral Terminal, Buffalo, N. Y. The application was signed by John C. Montana, president. It is proposed to use helicopters and in addition to the above described operations, a sightseeing service would be inaugurated on the American side of the Niagara Falls. The applicant now operates the Van Dyke Taxi and Transfer Co., Inc. (Docket 1318)

Walatka Air Service

This company of Dillingham, Alaska, filed for three types of air transport service. It asked a route between Dillingham and Naknek for air transport of persons, mail and property, a seasonal route for transport of cannery employes between Dillingham and several other cities during the canning season and authority to carry mail under subcontract from Woodley Airways, Inc., from Naknek to several towns in the Bristol Bay area. (Docket 1309)

THE KOLLSMAN 50,000 FOOT SENSITIVE ALTIMETER has paced, if not indeed anticipated, the progress of high altitude aircraft operation. This instrument is capable of recording pressure differentials at levels where few heavier-than-air machines have yet performed. It is so accurately made, so nicely yet positively balanced that a diaphragm movement of but .000045" registers 20 feet on the dial. The Sensitive Altimeter is among the highest expressions of Kollsman skill in design and execution of precision devices of many kinds.

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Here in sunny San Diego, the men and women of Standard Parachute Corporation toil wholeheartedly to supply "parachutes with a pedigree" for our Paratroopers and Flight Crews. The needlecraft skills that go into 'chutes today will be applied after Victory to the production of civilian goods with the Stanpar label.

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95 Foreign Route Applications on File

A RECENT CHECK of the CAB Docket section revealed that 95 applications for a specified 419,665 miles of foreign routes were on file. Because nine of these applications do not estimate the route mileage involved, due to proposed non-scheduled, charter type of operations, it is assumed that many more thousands of miles could be added to the total number of route miles covered in these requests.

The greatest number of air route miles is asked by a non-certificated applicant—U. N. Airships, Inc., Munsey Building, Washington, D. C. This company applied for four routes from Washington to South America, Africa, China and Australia. Efforts to obtain additional information regarding this company's plans, which include use of dirigibles, were not successful at the time this issue went to press.

Three other applicants, all certificated U. S. domestic carriers, asked for routes involving upwards of 20,000 miles. They were Northwest Airlines, Inc. to Manila, Calcutta, Tokio and Chungking and other points, 26,222 miles; Northeast Airlines, Inc. to London, Paris, Moscow, and scores of other foreign points, 23,107 miles; and National Airlines, Inc., for routes to the Latin America and Caribbean area, 21,072 miles.

The shortest route applied for in a separate application was filed by Braniff Airways, Inc. between Laredo, Texas, and Nuevo Laredo, Mexico—a distance of seven miles. The carrier now has a temporary certificate to operate this route.

A list of the foreign applications, the points which they propose to serve, and mileages involved follows:

Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
1196	AEROVIAS NACIONALES PUERTO RICO, INC.	San Juan, P. R.-Ciudad Trujillo, D. R.		No Estimate
		San Juan, P. R.-Ciudad Trujillo, D. R.	San Pedro Macoris, D.R.	
		San Juan, P. R. Port-Au-Prince, Haiti	San Pedro Macoris, D.R.; Ciudad Trujillo, D.R.; and Barahona, D.R.	
		San Juan, P. R.-Santiago De Cuba, Cuba	San Pedro Macoris, D.R.; Ciudad Trujillo, D.R.; Barahona, D.R., and Port-au-Prince, Haiti.	
		San Juan, P. R.-Santiago de Los Caballeros, D. R.	San Pedro Macoris, D.R.; and Ciudad Trujillo, D.R.	
		San Juan, P. R.-Cape Haitien, Haiti	San Pedro Macoris, D.R.; Ciudad Trujillo, D.R.; Santiago de Los Caballeros, D.R.	
		San Juan, P. R.-Santiago de Cuba, Cuba	San Pedro Macoris, D.R., and Ciudad Trujillo, D.R. Santiago de Los Caballeros, D.R., and Cape Haitien, Haiti	
924	AMERICAN AIRLINES, INC.		San Antonio, Texas on Ft. Worth/Dallas-Mexico City route	4
969	AMERICAN AIRLINES, INC.	Syracuse, N. Y.-Ottawa, Ontario, Canada		159
970	AMERICAN AIRLINES, INC.	Syracuse, N. Y.-Montreal, Quebec, Canada	Watertown and Massena, N. Y.	331
996	AMERICAN AIRLINES, INC.	New York, N. Y.-London, England Paris, France (Alternate)	Boston, Mass., and Newfoundland and Ireland	3,996
		Boston, Mass.-London, England Paris, France (Alternate)	Newfoundland and Ireland	
		Chicago, Ill.-London, England Paris, France (Alternate)	Detroit, Mich., Boston, Mass., Newfoundland, and Ireland	
		Detroit, Mich.-London, England Paris, France (Alternate)	Boston, Mass., Newfoundland, and Ireland	
			Alternate Routings	
		Chicago, Ill. / Detroit, Mich. / New York, N. Y. / Boston, Mass. — London, England; Paris, France (Alternate)	(a) via the Azores (b) via Bermuda and the Azores (c) via Newfoundland and the Azores (d) via Labrador and Iceland	
1173	AMERICAN AIRLINES, INC.	El Paso, Tex. / Ft. Worth/Dallas, Tex. — Mexico City, Mex.	Monterrey, Mexico	2010
1170	AMERICAN EXPORT AIRLINES, INC.	New York, N. Y.-San Juan, Puerto Rico	(Or between any terminal points and via any intermediate points within the same general area so proposed to be served which the Board may find to be required by the public convenience and necessity)	1,610
1171	AMERICAN EXPORT AIRLINES, INC.	New York, N. Y. / Boston, Mass. / Chicago, Ill. / Washington, D. C. — Capetown, S. Africa; Rome, Italy	San Juan, Puerto Rico; Port of Spain, Trinidad; Belem, Brazil; Natal, Brazil; Ascension Island, and Windhoek, South-West Africa; and between the intermediate point Natal, Brazil and the terminal point Rome, Italy, via Dakar, French West Africa, Casablanca (or Marrakech) Morocco and Algiers, Algeria.	14,066
1172	AMERICAN EXPORT AIRLINES, INC.	New York, N. Y. / Washington, D. C. / Chicago, Ill. / Boston, Mass. — Bombay, India; Sevastopol, USSR	Foynes, Eire; Paris, France; Rome, Italy; Athens, Greece; Cairo, Egypt; Basra, Iraq; and Karachi, India; between the intermediate point Athens, Greece; and the terminal point Sevastopol, USSR; via Istanbul, Turkey and Bucharest, Romania; and between the co-terminal points New York, Washington, Chicago and Boston, and the intermediate point Foynes, Eire, via the intermediate point Hamilton, Bermuda	13,750
1232	AMERICAN EXPORT AIRLINES, INC.	New York, N. Y.-Bermuda		770
*1105	AUTOMOBILE AIR FREIGHT CORP.	Illinois, Michigan, New York, Ohio, Pennsylvania, Wisconsin — Canada, Mexico		No Est.
1112	EDWARD G. BERN	Washington, D. C.-Dublin, Ireland	Baltimore, Md.; New York, N. Y.; and Boston, Mass.	No Est.
949	BRANIFF AIRWAYS, INC.	Nuevo Laredo, Mexico	Extension of Route No. 50 from Laredo, Tex.	7

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(Continued from page 55)

Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
1056	BRANIFF AIRWAYS, INC.	Ft. Worth/Dallas, Tex. — Rome, Italy; London, England; Stockholm, Sweden	Atlanta, Ga.; Charleston, S. C.; Hamilton, Bermuda; Payal, Azores; Lisbon, Portugal; Madrid, Spain; and (a) beyond Madrid, Spain; Barcelona, Spain; Marseille, France; Genoa, Italy to the terminal point Rome, Italy; and (b) beyond Madrid, Spain; Paris, France to the terminal point London, England; and (c) beyond Madrid, Spain; Paris, France; Berlin, Germany; Copenhagen, Denmark; Oslo, Norway to the terminal point Stockholm, Sweden.	8,522
1057	BRANIFF AIRWAYS, INC.	Houston, Tex. — Rio de Janeiro, Brazil; Buenos Aires, Argentina	Merida, Mexico; Balboa, Canal Zone; Bogota, Colombia; Quito, Ecuador; Guayquil, Ecuador; Lima, Peru; La Paz, Bolivia; Asuncion, Paraguay; and (a) beyond Asuncion, the intermediate point Sao Paulo, Brazil, and the terminal point Rio de Janeiro, Brazil; and (b) beyond Asuncion the terminal point Buenos Aires, Argentina.	6,814
	BRANIFF AIRWAYS, INC.	Houston, Tex.-Balboa, C. Z.	Havana, Cuba; Camaguey, Cuba; Santiago, Cuba; Kingston, Jamaica; Port au Prince, Haiti; Ciudad Trujillo, D.R.; San Juan, P. R.; St. John's, Antigua; Basse Terre, Guadelupe; Fort de France, Martinique; Castries, St. Lucia; Bridgetown, Barbados; St. George, Granada; Port of Spain, Trinidad; Caracas, Venezuela; Maracaibo, Venezuela; Barranquilla, Colombia; and the intermediate point Balboa, Canal Zone	4,383
1194	BRANIFF AIRWAYS, INC.	Laredo, Tex. / Nuevo Laredo, Mex. — Mexico City, Mex.	Monterrey, Mexico.	334
384	ANDREW J. BURKE	Corpus Christi, Tex.-Monterrey, Mex.	Laredo, Tex.	280
1153	CARIBBEAN-ATLANTIC AIRLINES, INC.	San Juan, P. R.-Cuidad Trujillo, D. R.	This application should be construed as an application for any new route or routes which would link Puerto Rico with any point or points within the Continental United States, Mexico, Central America, South America, or any of the other Caribbean Islands as the Board may deem desirable	240
798	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans La.-Balboa, C. Z.	Merida, Mexico; Belize, British Honduras; Guatemala City, Guatemala; San Salvador, El Salvador; Tegucigalpa, Honduras; Managua, Nicaragua and San Jose, Costa Rica.	
	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans La.-Balboa, C. Z.	Tampa, Fla.; Havana, Cuba; and Kingston, Jamaica.	
	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans, La.-Havana, Cuba	Tampa, Fla.; and Miami, Fla.	
	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans, La.-Port of Spain, Tr.	Tampa, Fla.; Miami, Fla.; Nassau, Bahama Islands; Santiago, Cuba; Kingston, Jamaica; Port au Prince, Haiti; Ciudad Trujillo, Dominican Republic; San Juan, Puerto Rico; St. Thomas, Virgin Islands; St. John's, Antigua; St. Lucia, Windward Islands and Barbados.	10,619
	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans, La.-Port of Spain, Tr.	Havana, Cuba; Kingston, Jamaica; Port au Prince, Haiti; Ciudad Trujillo, Dominican Republic; San Juan, Puerto Rico; St. Thomas, Virgin Islands; St. John's Antigua; St. Lucia, Windward Islands and Barbados.	
880	CHICAGO AND SOUTHERN AIR LINES, INC.	Chicago, Ill.-Batavia, Java	Winnipeg, Edmonton and Whitehorse, Canada; Fairbanks and Nome, Alaska; Kamenskoe, Nikolaevsk and Vladivostok, Russia; Keijo, Korea; Shanghai and Canton, China; Saigon, French Indo-China; and Singapore, Malay States.	10,150
945	CHICAGO AND SOUTHERN AIR LINES, INC.	Houston, Tex.-Mexico City, Mex.	Tampico, Mex.	760
1061	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans, La.-Mexico City, Mex.	Tampico, Mex.	933
1085	CHICAGO AND SOUTHERN AIR LINES, INC.	New Orleans, La.-Rio de Janeiro, Brazil	Havana, Cuba; Barranquilla, Colombia; San Cristobal, Venezuela; and Manaos and Goyania, Brazil.	9,824
		New Orleans, La.-Buenos Aires, Arg.	Havana, Cuba; Balboa, Canal Zone; Cali, Colombia; La Paz, Bolivia; and Salta, Argentina.	
*961	COASTAL TANK LINES, INC.		Between any and all points in the United States, Alaska, Canada and Mexico.	
445	COLONIAL AIRLINES, INC.	New York, N. Y.-Nassau, The Bahamas	Atlantic City, N. J.; Norfolk, Va.; Elizabeth City, N. C.; New Bern, N. C.; Wilmington, N. C.; Myrtle Beach, S. C.; Georgetown, S. C.; and Charleston, S. C.	1,400
594	COLONIAL AIRLINES, INC.	Request for temporary certificate covering the above route.		50
1070	COLONIAL AIRLINES, INC.	Massena, N. Y.-Ottawa, Canada		1,480
1207	COLONIAL AIRLINES, INC.	New York, N. Y. / Norfolk, Va. — Bermuda		
		Miami, Fla.-Port of Spain, Tr.	Havana, Cuba; Camaguey, Cuba; Port-au-Prince, Haiti; San Juan, Puerto Rico; St. John and St. Thomas, Virgin Islands	
		Nassau, Bahamas-Port of Spain, Tr.	Camaguey, Cuba; Port-au-Prince, Haiti; San Juan, Puerto Rico; St. John and St. Thomas, Virgin Islands	2,145
800	COMPANIA MEXICANA DE AVIACION, S. A.	Mexico City, Mex.-Laredo, Tex.	Monterrey, Mex., and Nuevo Laredo, Mexico	560

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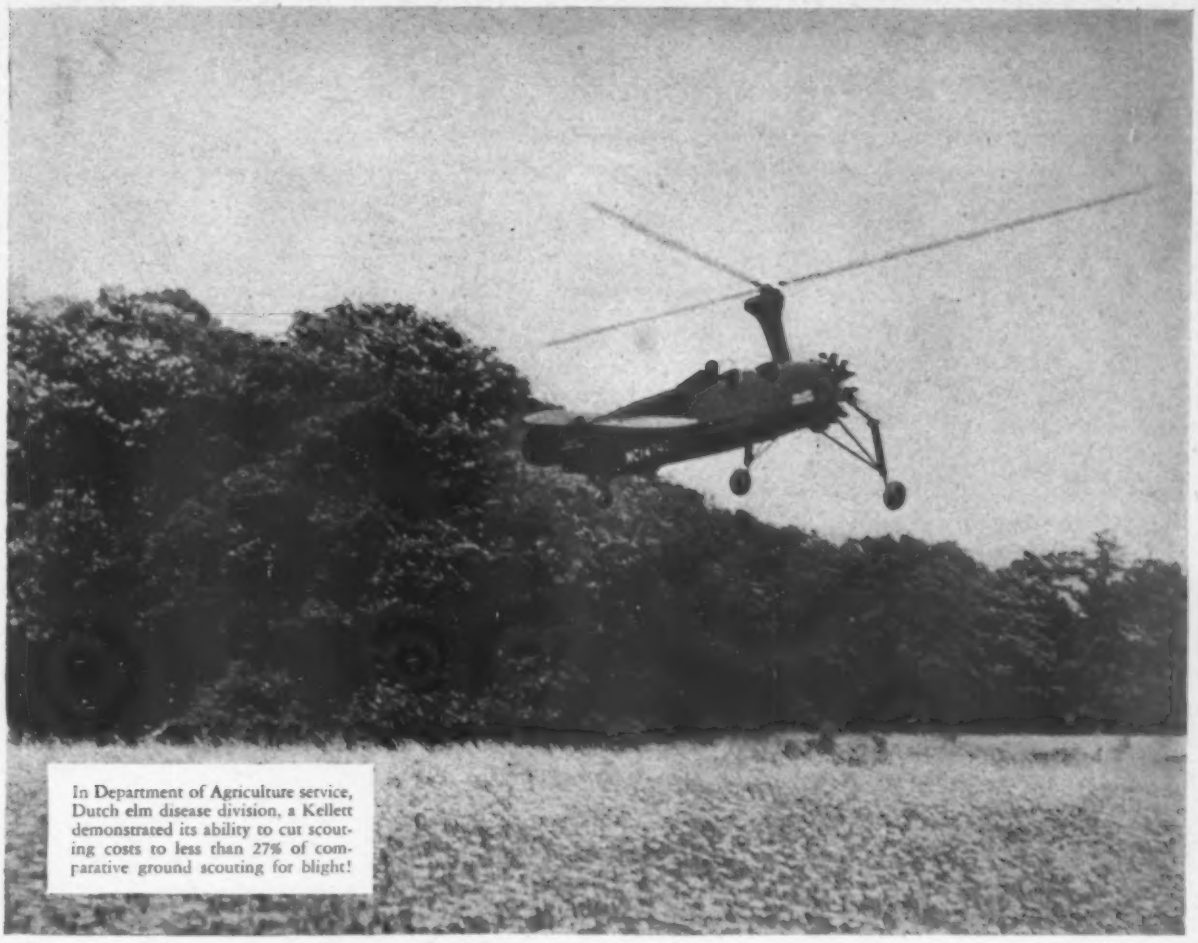
★ NUMBER 6 IN A SERIES, TRACING FIFTEEN YEARS OF KELLETT ROTARY WING PROGRESS ★



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OLDEST ROTARY WING AIRCRAFT MANUFACTURING COMPANY

(Continued from page 56)

Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
***1224	COUNTRYMAN AND MAC DONALD	Continental United States and Alaska		No Est.
1159	DELTA AIR CORPORATION	New Orleans, La.-Havana, Cuba	Applicant is willing to serve any community or communities along the proposed route or to extend beyond the herein named terminal Havana, Cuba, to any other point or points in foreign countries to which the Board in its judgment, may deem service to be required by the public convenience and necessity.	678
845	W. J. DILLNER TRANSFER COMPANY	Continental United States-Alaska	Allentown, Bellefonte, Bradford, Chambersburg, Chester, Coatesville, Easton, Erie, Gettysburg, Hanover, Harrisburg, Lancaster, Langhorne, Lewistown, Matamoras, Meadville, Mt. Jewett, New Castle, Oil City, Philadelphia, Pittsburgh, Reading, Scranton, Sharon, Sunbury, Towanda, Tyrone, Warren, Waynesboro, Waynesburg, Williamsburg, Williamsport, Uniontown, Pa.; and all the airports in the several States, Alaska and the District of Columbia.	No Est.
782	EASTERN AIR LINES, INC.	New Orleans, La.-Balboa, C. Z.	Merida, Mex.; Belize, British Honduras; Guatemala City, Guatemala; San Salvador, El Salvador; Tegucigalpa, Honduras; Managua, Nicaragua; and San Jose, C. R.	2,068
		New Orleans, La.-Balboa, C. Z.	Havana, Cuba.	1,660
		Tampa, Fla.-Balboa, C. Z.	Havana, Cuba.	1,320
		Miami, Fla.-Balboa, C. Z.	Havana, Cuba.	1,215
1066	EASTERN AIR LINES, INC.	Boston, Mass.-Ciudad Trujillo, D. R.	New York, N. Y., Washington, D. C., (Nassau, B. W. I. as alternate)	1,904 130
	EASTERN AIR LINES, INC.	Chicago, Ill.-Ciudad Trujillo, D. R.	Louisville, Ky., Atlanta, Ga., Miami, Fla., and Nassau, B. W. I.	2,085
	EASTERN AIR LINES, INC.	Detroit, Mich.-Ciudad Trujillo, D. R.	Cleveland, Ohio (Charlotte, N. C. and Columbia, S. C., in the alternative), Jacksonville, Fla., Miami, Fla., and Nassau, B. W. I.	2,031
	EASTERN AIR LINES, INC.	St. Louis, Mo.-Ciudad Trujillo, D. R.	Nashville, Tenn., Atlanta, Ga., Miami, Fla., and Nassau, B. W. I.	1,929
	EASTERN AIR LINES, INC.	Kansas City, Mo.-Ciudad Trujillo, D. R.	Memphis, Tenn., Birmingham, Ala., Tampa, Fla., and Nassau, B. W. I.	2,156
	EASTERN AIR LINES, INC.	Ciudad Trujillo, D. R. } Buenos Aires, Arg. Montevideo, Uru.	Caracas (LaGuaira), Venezuela; Manaos, Brazil; Corumba, Brazil; Asuncion, Paraguay.	3,945
	EASTERN AIR LINES, INC.	Ciudad Trujillo, D. R.-Rio de Janeiro, Brazil	Caracas (LaGuaira), Venezuela; Manaos, Brazil; Cuyaba, Brazil, and Sao Paulo, Brazil	3,630
	EASTERN AIR LINES, INC.	New Orleans, La.-Balboa, Canal Zone	Tampa and Miami, Fla., and Havana, Cuba	1,931
	EASTERN AIR LINES, INC.	Balboa, C. Z.-Rio de Janeiro, Brazil	Bogota, Colombia; Sao Felipe, Manaos, Cuyaba and Sao Paulo, Brazil	3,544
	EASTERN AIR LINES, INC.	Balboa, C. Z. { Buenos Aires, Arg. Montevideo, Uru.	Bogota, Colombia; Sao Felipe, Manaos and Corumba, Brazil, and Asuncion, Paraguay	3,859
	EASTERN AIR LINES, INC.	New Orleans, La.-Mexico City, Mex.	Houston, Corpus Christi and Brownsville, Tex., and Tampico, Mexico	950
	EASTERN AIR LINES, INC.	New Orleans, La.-Mexico City, Mex.	Non-stop	915
	EASTERN AIR LINES, INC.	Houston, Tex.-Mexico City, Mex.	Non-stop	750
	EASTERN AIR LINES, INC.	Corpus Christi, Tex.-Mexico City, Mex.	Non-stop	592
	EASTERN AIR LINES, INC.	Chicago, Ill. } Mexico City, Mex. Detroit, Mich. }	Indianapolis, Ind., Memphis, Tenn., Corpus Christi, Tex., Brownsville, Tex., and Tampico, Mexico	1,919
	EASTERN AIR LINES, INC.	Any point or series of points in the United States—any point or series of points in the Caribbean area and Latin America		
	EASTERN AIR LINES, INC.	Washington, D. C. } Montreal, Canada Baltimore, Md. } Ottawa, Canada	Reading, Scranton/Wilkes-Barre, Pa., Binghamton and Syracuse, N. Y. (Extensions of Routes Nos. 5 and 6)	670
1275	JOHN W. FOREMAN	Bonneys Ferry-Idaho Banff-Lake Louise, Canada		80
*905	GORDONS NORTH SOUTH AIR LINES, INC.	Detroit, Mich.-Buenos Aires, Argentina	Chicago, Ill.; St. Louis, Mo.; Memphis, Tenn.; Vicksburg, Miss.; New Orleans, La.; Havana, Cuba; LaGuaira, Venezuela; and Rio de Janeiro, Brazil	7,090
1166	GRACE LINE, INC.	New York, N. Y.-La Guaira, Venezuela	Nassau, B. W. I.; Port-au-Prince, Haiti; Aruba, N. W. I. (as an alternate Curacao, N. W. I.)	
		La Guaira, Venezuela-New York, N. Y.	Maracaibo, Venezuela; Barranquilla, Colombia; Port-au-Prince, Haiti; (as an alternate Kingston, Jamaica), Nassau, B. W. I.	4,540
		New York, N. Y.-Balboa, Canal Zone	Nassau, B. W. I.; Kingston, Jamaica	
707	W. R. GRACE & COMPANY	Tampa, Fla.; Miami, Fla.; or New Orleans, La.	(United States Terminal for Pan American Grace)	1,560
903	GREAT LAKES STORAGE AND MOVING CO.		Between points in the United States and Alaska	
851	HAWAIIAN AIRLINES, LTD.	Honolulu, T. H.-Los Angeles, Calif.		2,591
902	INLAND AIR LINES, INC.	Great Falls, Mont.-Nome, Alaska	Lethbridge, Calgary, Edmonton, Grand Prairie, Ft. St. John and Whitehorse, Canada; and Fairbanks, Alaska	2,385
		Fairbanks, Alaska-Bethel, Alaska	Anchorage, Alaska	666

(Turn to page 60)

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In addition to instructing, it is our duty to maintain the hundreds of Army Aircraft used at our two big and busy Primary Training Schools. Every mechanical detail of an airplane must be absolutely right for every flight! In order to accomplish this, we have acquired the most modern shops, hangars and maintenance equipment . . . and a seasoned staff of hundreds of mechanics and aircraft specialists.

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GEORGIA AIR SERVICE

GEORGIA AIR SERVICE, INC.

ATLANTA GEORGIA

Flight Contractors to U. S. Army Air Forces, Bennettsville, S. C., and Jackson, Tenn.

(Continued from page 58)

Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
750	INTERNATONAL AIRWAYS, INC.	New York, N. Y.-Balboa, C. Z.	Nassau, Bahama Islands; Havana, Cuba; and Kingston, Jamaica	
		New York, N. Y.-Mexico City, Mex.	Nassau, Bahama Islands; Havana, Cuba; Merida, Mexico and Vera Cruz, Mexico	
		New York, N. Y.-San Juan, Puerto Rico	Bermuda, B. W. I.	
		San Juan, Puerto Rico—Havana, Cuba	Ciudad Trujillo, D. R.; Port-au-Prince, Haiti; Santiago and Camaguey, Cuba	
		Balboa, C. Z.-Port of Spain, Trinidad	Cartegena, Colombia; Barranquilla, Colombia; Maracaibo, Venezuela; Aruba and Willemstad, Curacao, N. W. I.; and LaGuaira, Venezuela	10,415
		Balboa, C. Z.-Mexico City, Mex.	San Jose, Costa Rica; Managua, Nicaragua; Tegucigalpa, Honduras; San Salvador, El Salvador; Guatemala, Guatemala; and Oaxaca, Mexico	
		San Juan, Puerto Rico-Port of Spain Tr.	Port-de-France, Martinique; and Bridgetown, Barbados, B. W. I.	
1252	INTERSTATE BUSSES CORPORATION	Continental United States-Canada-Mexico		No. Est.
1065	MATSON NAVIGATION COMPANY	Honolulu, Hawaii-San Francisco, Calif.		
		Honolulu, Hawaii-Los Angeles, Calif.		10,279
		Honolulu, Hawaii-Portland, Oregon		
		Honolulu, Hawaii-Seattle, Washington		
628	MID CONTINENT AIRLINES, INC.	Minot, N. Dak.-Regina, Canada		213
1160	MOORE McCORMACK LINES, INC.	New York, N. Y.-Buenos Aires, Argentina	Hamilton, Bermuda; San Juan, Puerto Rico; Port of Spain, Trinidad; Belem (Para), Brazil; Sao Salvadore (Bahia), Brazil; Rio de Janeiro, Brazil; Sao Paulo, Brazil; Montevideo, Uruguay	6,727
		New York, N. Y.-Buenos Aires, Argentina	Hamilton, Bermuda; St. Thomas, Virgin Islands; Port of Spain, Trinidad; Belem (Para), Brazil; Sao Salvadore (Bahia), Brazil; Rio de Janeiro, Brazil; Sao Paulo, Brazil; Montevideo, Uruguay	6,689
		New York, N. Y.-Buenos Aires, Argentina	Nassau, B. W. I.; Ciudad Trujillo, D. R.; Port of Spain, Trinidad; Belem (Para), Brazil; Sao Salvadore (Bahia), Brazil; Rio de Janeiro, Brazil; Sao Paulo, Brazil; Montevideo, Uruguay	6,922
416	NATIONAL AIRLINES, INC.	Tampa, Fla.-Havana, Cuba	Key West, Fla.	344
838	NATIONAL AIRLINES, INC.	Tampa, Fla. / Miami, Fla. — Balboa, C. Z.		1,307
1167	NATIONAL AIRLINES, INC.	Tampa, Fla. / Miami, Fla. — Mexico City, Mex.	Havana, Cuba, and Merida, Mexico	1,478
1168	NATIONAL AIRLINES, INC.	Tampa, Fla. / Miami, Fla. / New Orleans, La. — Santiago, Chile; Buenos Aires, Arg.; Montevideo, Uruguay	Havana, Cuba; Kingston, Jamaica; and the Panama Canal Zone to the terminal point Santiago; and (a) beyond Santiago the terminal points Buenos Aires and Montevideo.	
		Tampa, Fla. / Miami, Fla. / New Orleans, La. — Santiago, Chile; Buenos Aires, Arg.; Montevideo, Uruguay	(a) Tampa and/or Miami via Havana, Cuba to Merida, Mexico; (b) New Orleans, La. to the intermediate point Merida, Mex.; (c) beyond Merida, Mex.; via Panama Canal Zone to the terminal point Santiago, Chile; and (d) beyond Santiago the terminal points Buenos Aires and/or Montevideo.	21,072
		Miami, Fla.-Buenos Aires, Argentina	Ciudad Trujillo, D. R.; Port of Spain, Tr.; Belem, Brazil; Rio de Janeiro, Brazil and Montevideo, Uruguay	
		Miami, Fla.-Rio de Janeiro, Brazil	Ciudad Trujillo, D. R.; LaGuaira, Venezuela; Manaos, Brazil; Cuyaba, Brazil and Sao Paulo, Brazil.	
		Miami, Fla. — Santiago, Chile; Buenos Aires, Arg.; Montevideo, Uruguay	(a) beyond Cuyaba, Brazil to Asuncion, Paraquay and beyond Asuncion to the terminal points. (a) Santiago, Chile; (b) Buenos Aires, Argentina; and (c) Montevideo, Uruguay	
148	NEW YORK AND BERMUDIAN AIR LINE	Newark, N. J.-Plaice's Point, Bermuda		665
1012	NORTH COAST TRANSPORTATION CO.	Seattle, Wash.-Portland, Oregon	Tacoma, Ft. Lewis, Olympia, Chehalis, Centralia, Kelso-Longview and Vancouver, Washington	
		Seattle, Wash.-Blaine, Washington	Everett, Mount Vernon and Bellingham, Washington	301
		Tacoma, Wash.-Bremerton, Washington		
		Blaine, Wash.-Vancouver, B. C. Canada		
855	NORTHEAST AIRLINES, INC.	Boston, Mass.-London, Eng./Paris, Fr.		
		Boston, Mass.-London, Eng./Paris, Fr. Moscow, Russia	The Azores; Amsterdam, Holland; Copenhagen, Denmark; Stockholm, Sweden; and Leningrad, Russia	
		Boston, Mass.-London, England	Newfoundland and Glasgow, Scotland	
		Boston, Mass.-London, England	Newfoundland; Reykjavik, Iceland; The Faroe Islands; and Glasgow, Scotland	23,107
		Boston, Mass.-Prague, Czech.-Moscow, Russia	Reyjavik, Iceland; the Faroe Islands; Oslo, Norway and beyond Oslo to Copenhagen, Denmark to the terminal point Prague, Czech.; and beyond Oslo to Stockholm, Sweden; Leningrad, Russia; and the terminal point, Moscow, Russia	
682	NORTHEAST AIRLINES, INC.	Bangor, Me.-Northwest River, Labrador	Moncton, N. B.; Stephenville and Argentia, Newfoundland	1,803
547	NORTHWEST AIRLINES, INC.	Chicago, Ill.-Nome, Alaska	Minneapolis/St. Paul, Minn.; and Fargo, N. Dak.; and Fairbanks, Alaska	
		Chicago, Ill.-Nome, Alaska	Minneapolis/St. Paul, Minn.; Fargo, N. Dak.; fuel and service stops only at McMurray, Alberta, Canada; Norman Wells, North West Territory, Can.; and Ft. Yukon, Alaska	

(Turn to page 62)

To the ladies, God bless them!

HERE YOU SEE a force that Hitler and Tojo sadly misjudged — *American womanpower.*

Day and night, throughout the U.S. aircraft industry, women by the thousands are working to upset the Axis applecart. Women who were stenographers, home-bodies, salespeople . . . the girl next door . . .

They multiply mightily our productive power. Make it possible for ever-growing swarms of warplanes to be turned out faster.

The airplanes built at Northrop carry a message from free men and women — in the only words the enemy seems to understand. And even as our planes speak in battle, the Northrop group works on — creating and building yet more deadly aircraft.

NORTHROP
Aircraft, Inc.

NORTHROP AIRCRAFT, INC. • NORTHROP FIELD, HAWTHORNE, CALIFORNIA • MEMBER AIRCRAFT WAR PRODUCTION COUNCIL, INC.

(Continued from page 60)

Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
861	NORTHWEST AIRLINES, INC.	Seattle, Wash.-Nome, Alaska	Anchorage, Alaska	1,980
862	NORTHWEST AIRLINES, INC.	Nome, Alaska-Manila, P. I.	Peiping and Shanghai, China	26,222
		Nome, Alaska-Calcutta, India	Peiping and Chungking, China	
		Seattle, Wash.-Manila, P. I.	Anchorage and Nome, Alaska; Peiping and Shanghai, China	
		Seattle Wash.-Calcutta, India	Anchorage and Nome, Alaska; Peiping and Chungking, China	
935	NORTHWEST AIRLINES, INC.	Seattle, Wash.-Victoria, B. C. Canada	Port Angeles, Wash.	93
985	NORTHWEST AIRLINES, INC.	Anchorage, Alaska-Manila, P. I.	Dutch Harbor, Kiska and Attu, Aleutian Islands; Paramushiro, Kurile Islands; Tokyo, Japan; and Shanghai, China	10,372
		Anchorage, Alaska-Calcutta, India	Dutch Harbor, Kiska and Attu, Aleutian Islands; Paramushiro, Kurile Islands; Tokyo, Japan; Darien, Manchuria; Peiping and Chungking, China	
		Seattle, Wash.-Manila, P. I.	Anchorage, Alaska; Dutch Harbor, Kiska and Attu, Aleutian Islands; Paramushiro, Kurile Islands; Tokyo, Japan and Shanghai, China	
		Seattle, Wash.-Calcutta, India	Anchorage, Alaska; Dutch Harbor, Kiska and Attu, Aleutian Islands; Paramushiro, Kurile Islands; Tokyo, Japan; Darien, Manchuria; Peiping and Chungking, China	
1110	NORTHWEST AIRLINES, INC.	Seattle, Wash.-Honolulu, T. H.		2,681
841	PANAIR DO BRASIL, S. A.	Belem, Brazil-Miami, Fla.	Cayenne, French Guiana; Paramaribo, Dutch Guiana; Georgetown, British Guiana; Port of Spain, Trinidad; San Juan, Puerto Rico; Ciudad Trujillo, Dominican Republic; Port-au-Prince, Haiti, and Camaguey, Cuba	3,194
516	PAN AMERICAN AIRWAYS, INC.	Tampa, Florida-Merida, Mexico	Havana, Cuba	300
545	PAN AMERICAN AIRWAYS, INC.	San Juan, P. R.-Charleston, S. C.	Nassau, Bahama Islands	1,610
		San Juan, P. R.-Baltimore, Md.; New York, N. Y.		
689	PAN AMERICAN AIRWAYS, INC.		Camaguey, Cuba as intermediate point between Miami and the Canal Zone	32
701	PAN AMERICAN AIRWAYS, INC.	Los Angeles, Calif.-Mexico City, Mex.	Mazatlan, Mexico	1,605
1157	PAN AMERICAN AIRWAYS, INC.	Port of Spain, Trin.-Asuncion, Para. (Cut-off)	Manaos and Corumba, Brazil	8,396
		Balboa, C. Z.-Rio de Janeiro, Brazil	Bogota, Colombia; Manaos and Goyania, Brazil Havana, Cuba as intermediate point between Miami, Fla. and the Canal Zone; also on Puerto Rico-East Coat of South America route; also to transport mail between Port-au-Prince, Haiti-Santiago, Cuba-Kingston, Jamaica	
		Mexico City, Mex.-New Orleans, La. Brownsville, Tex.-Houston, Tex. New Orleans, La.-Havana, Cuba Merida, Mex.-Houston, Tex.		
			Substitute Balboa, Canal Zone for Cristobal, Canal Zone	
			Sao Paulo, Brazil as intermediate point between Rio de Janeiro and Porto Alegro, Brazil	
			Consolidate New Orleans-Guatemala City route with general certificate relating to Latin American operations, and remove time limitation in New Orleans-Guatemala certificate.	
1174	PAN AMERICAN-GRACE AIRWAYS, INC.	Chiclayo, Peru-Ramon Castilla, Peru	Chachapoyas, Moyobamba, Yurimaguas and Iquitos, Peru.	7,765
		Balboa, C. Z.-Buenos Aires, Argentina	Guayaquil, Ecuador; Lima, Peru; Antofagasta, Chile, and either Tucuman or Cordoba, Argentina	
		Cali, Colombia-Buenos Aires, Argentina	Iquitos, Peru and LaPaz, Bolivia (Alternate—Cochabamba or Santa Cruz, Bolivia)	
		Buenos Aires, Arg.-Montevideo, Uruguay Mendoza, Arg.-Tucuman, Arg.	San Juan, La Rioja and Catamarca, Argentina	
1005	PENNSYLVANIA - CENTRAL AIRLINES	United States of America-Great Britain	Anchored Seadromes	3,411
1155	PENNSYLVANIA - CENTRAL AIRLINES	Miami, Fla.-Port of Spain, Trin.	Nassau, Bahama Islands; Camaguey, Cuba; Port-au-Prince, Haiti; San Juan, Puerto Rico	7,687
		Miami, Fla.-Barranquilla, Colombia	Havana, Cuba; Kingston, Jamaica	
		New Orleans, La.-Port of Spain, Trin.	Merida, Mexico; Belize, British Honduras; Guatemala City, Guatemala; San Salvador, El Salvador; Tegucigalpa, Honduras; Managua, Nicaragua; San Jose, Costa Rica; Balboa/Cristobal, Canal Zone; Barranquilla, Colombia; Maracaibo, Venezuela; Caracas, Venezuela.	
		New Orleans, La.-Belize, British Honduras	Havana, Cuba	
1195	PENNSYLVANIA - CENTRAL AIRLINES	Buffalo, N. Y.-Ottawa, Canada	Rochester, N. Y.	237
1291	PENNSYLVANIA - CENTRAL AIRLINES	Syracuse, N. Y.-Montreal, Canada		256
1187	ROYAL DUTCH AIR LINES (KLM)	Willemstad, Curacao, N. W. I.-Miami, Fla.	Oranjestad, N. W. I.; Aruba, N. W. I.; Port-au-Prince, Haiti; Kingston, Jamaica; Camaguey and/or Havana, Cuba	No Est.

(Turn to page 65)

Veteran in Search of a Peacetime Future

THIS veteran knows of no job to come back to after the war.

It was born of war necessity—built to perform a strategic purpose new in the history of aircraft.

The requirements were an engineering challenge. It had to be strong to do its heavy work. Yet it had to be light and fit in the small space available.

That is why even optimists doubted such a device could be built.

But here it is: The Lear Actuator.

Its job is operating flaps, landing gears, shutters and other equipment on the power of an airplane storage battery.

Now, of course, our plants are working round the clock to make enough of these for the fighting ships of Uncle Sam.

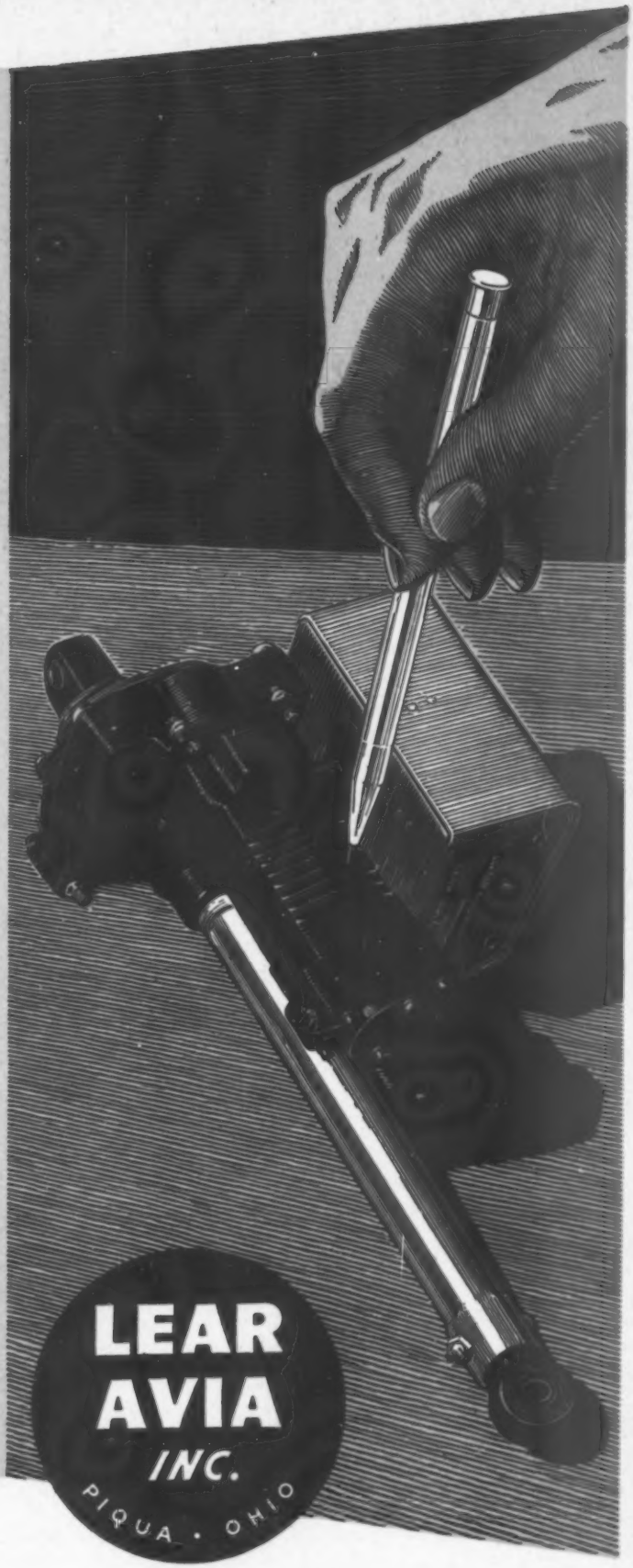
But we know that such unique devices, the midget motors that drive them and all the 250 Lear products, must have an important future in some peacetime products.

They may park your car with the push of a button—or do any of thousands of jobs we haven't thought of.

That is why we are telling you about them. We want to find jobs for these able veterans.

And we want you to know that the kind of engineering thinking and production technique that made them possible is available.

PLANTS: Piqua, O., and Grand Rapids, Mich. BRANCHES AT: New York, Los Angeles, Chicago, Detroit, Cleveland, Providence.



PENNSYLVANIA CENTRAL AIRLINES

again first in service in the skyways

Hostess Lynda Britt of P.C.A.'s Capital Fleet filling a first-aid kit with a supply of Angostura Bitters. Dr. Siegert's Angostura Bitters is a "must" on all P.C.A. airliners because of its recognized efficacy as a stomach conditioner and corrective in ordinary gastric disturbances.

MUSKEGON
MILWAUKEE
LANSING
FLINT
GRAND RAPIDS
DETROIT
BUFFALO
ERIE
CLEVELAND
YOUNGSTOWN
AKRON
PITTSBURGH
WHEELING
MORGANTOWN
CLARKSBURG
BALTIMORE
WASHINGTON
CHARLESTON
TRI-CITIES
NORFOLK
KNOXVILLE
CHATTANOOGA
HUNTSVILLE
BIRMINGHAM

PCA

ROUTE OF THE CAPITAL FLEET
SKYWAY TO THE VICTORY CITIES

From the revolutionary P. C. A. Seadrome Plan which has fired the imagination of the whole transportation world, to the making of Dr. Siegert's Angostura Bitters a "must" in the first-aid kits of every P. C. A. airliner, may seem a far cry. Actually, however, both are expressions of the same quality of practical imagination that lies behind leadership in any field. Both are projections of the same fundamental idea:—service which anticipates the needs and desires equally of a world of customers or a single customer, now and in the future.

ANGOSTURA
Dr. Siegert's
BITTERS

ANGOSTURA-WUPPERMANN CORPORATION · 304 EAST 45th STREET, NEW YORK 17, N. Y.

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Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
1277	ROYAL DUTCH AIR LINES (KLM) ROYAL NETHERLANDS INDIES AIRWAYS	Amsterdam- U. S. Batavia-San Francisco		
831	SHAWMUT AIR FREIGHT AND TRANSPORT COMPANY	Detroit-Windsor, Can. Boston, Mass.-Montreal, Quebec, Canada Boston, Mass.-Halifax, Nova Scotia Boston, Mass.-London, England	Concord, N. H.; Burlington, Vt.; and St. Hubert, Quebec, Canada. Portland, Augusta, Bangor and Millinocket, Me.; Blissville and Moncton, New Brunswick, and Dartmouth, Nova Scotia. Halifax, Nova Scotia; Foynes, Eire; and Liverpool, England.	No Est.
*805	SOUTHWESTERN AIR LINES, INC.	Houston, Tex.-St. Louis, Mo. St. Louis, Mo.-Mexico City, Mex.	Shreveport, La. and Little Rock, Ark. Little Rock, Ark.; Shreveport, La.; Houston, Tex.; and Tampico, Mex.	2,192
*1169	SOUTHWESTERN AIR LINES, INC.	Houston, Tex.-St. Louis, Mo. St. Louis, Mo.-Mexico City, Mex.	Shreveport, La.; and Little Rock, Ark. Little Rock, Ark.; Shreveport, La.; Houston, Tex.; and Tampico, Tamaulipas, Mexico	1,497
774	TACA, S. A.	San Jose, C. R.-Miami, Florida	Managua, Nicaragua; and/or Tegucigalpa, Honduras; and/or San Salvador, El Salvador; and/or Belize, British Honduras, and/or Havana, Cuba	No Est.
1235	TRAILWAYS OF NEW ENGLAND, INC.	Haverhill, Mass.-New York, N. Y.	Lawrence, Lowell, Ayer, Fitchburgh, Gardner, Athol, Orange, Belchertown, Northampton, Easthampton, South Hadley, Holyoke, Chicopee, and Springfield, Mass. Thompsonville, Windsor Locks, Windsor, Hartford, Middletown, Meriden, New Haven, Bridgeport, Westport, Norwalk, Darien, Stamford and Greenwich, Conn.; Port Chester, Rye, Mamaroneck, Larchmont, New Rochelle, N. Y.	[illegible]
		Boston, Mass.-Hartford, Conn.	Watertown, Waltham, Marlboro, Brookline, Newton, Wellesley, Natick, Framingham, Worcester, and Sturbridge, Mass.; Stafford, Stafford Springs, Rockville, Manchester and East Hartford, Conn.	89
		Concord, N. H.-Fitchburg, Mass.	Manchester and Nashua, N. H.	54
1059	TRANSCONTINENTAL & WESTERN AIR, INC.	Between points and places in all states of the United States and Canada Los Angeles/San Diego, Calif.-Honolulu, Hawaii		2,557
1060	TRANSCONTINENTAL & WESTERN AIR, INC.	Washington, D. C. New York, N. Y. Boston, Mass. — London, England — Paris, France	The Azores	3,827
		Chicago, Ill. Detroit, Mich. Boston, Mass. Washington, D. C. — London, England — Paris, France	The Azores	4,135
		New York, N. Y. Boston, Mass. Chicago, Ill. — Cairo, Egypt	The Azores	5,797
		Detroit, Mich. Boston, Mass. — Cairo, Egypt	The Azores	6,131
1217	UNITED AIR LINES TRANSPORT CORP.	Cleveland, Ohio-Montreal, Que. Can.	Erie, Pa.; Buffalo and Rochester, N. Y.; and Ottawa, Ontario, Canada	525
1148	UNITED FRUIT COMPANY	New Orleans, La.-Balboa, C. Z. New Orleans, La.-Balboa, C. Z.	Swan Island Havana, Cuba; Merida, Mexico; Belize, British Honduras; Puerto Barrios and Guatemala City, Guatemala; Puerto Cortes, La Lima, Tela, Ceiba, Tegucigalpa, Honduras; Managua, Nicaragua; San Jose, Limon, Quepos, Golfito, Costa Rica; and Almirante and Armuelles, Panama	1,373 4,753
		New Orleans, La.-Guatemala City, Guatemala	Merida, Mexico; Belize, British Honduras; Puerto Barrios, Guatemala; Puerto Cortez, La Lima, Tela, Ceiba and Tegucigalpa, Honduras	
		Washington, D. C.- — Buenos Aires, S. A.; Calcutta, Indian; Moscow, Russia; Brisbane, Australia	Rio de Janeiro, S. A.; Dakar, Capetown, Zanzibar, Glasgow, Los Angeles, Honolulu, Chungking and Darwin	41,633
1306	U. N. AIRSHIPS			
1007	VANCOUVER ISLAND AIR LINES, LTD.	Victoria, B. C.- — Seattle; Anacortes; Bellingham, Wash.; Port Angeles; Everett		243
958	VAN SON, JOHN C.	Buffalo, N. Y.-Niagara Falls, Ontario, Canada	Grand Islands and Niagara Falls, New York	21
1120	WASHINGTON MOTOR COACH CO., INC.	Port Angeles, Wash.-Butte, Montana	Port Townsend, Seattle, Skykomish, (Alternate: Port Townsend, Everett, Skykomish), Leavenworth, Wenatchee, Coulee Junction, (Alternate: Wenatchee, Quincy, Coulee Junction), Davenport and Spokane, Wash.; Coeur-d'Alene, Idaho and Wallace, Idaho; Superior, Missoula and Deer Lodge, Mont.	790
		Seattle, Wash.-Walla Walla, Wash.	North Bend, Cle Elum, Ellensburg, Yakima, Toppenish and Pasco, Wash.	263

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Docket No.	Applicant	Terminals	Intermediate Points	Mileage Estimated by Applicant
	WASHINGTON MOTOR COACH CO.	Portland, Ore.-Eastport, Idaho	Vancouver and Camas, Wash.; The Dalles, Ore.; Toppenish, Yakima, Moses Lake (Alternate: Yakima, Ellensburg, Quincy, Moses Lake), Ritzville and Spokane, Wash.; Coeur d'Alene, Sand Point, and Bonners Ferry, Idaho	613
		Ellensburg, Wash.-Oroville, Wash.	Wenatchee, Chelan and Omak, Wash.	180
		Seattle, Wash.-Bremerton, Wash.		13
		Port Angeles, Wash.-Victoria, B. C., Canada		30
525	WATERMAN AIRLINE, INC.	New Orleans, La.-San Juan, Puerto Rico	Tampa, Florida	1,74
631	WESTERN AIR LINES, INC.	Lethbridge, Alberta, Can.-Anchorage, Alaska	Calgary, Edmonton, Canada; Grande Prairie, Canada, and Juneau, Alask	
		Anchorage, Alaska-Nome, Alaska	McGrath, Alaska	2,58
		Anchorage, Alaska-Fairbanks, Alaska		
		Grand Prairie, Can.-Anchorage, Alaska	Ft. St. John, Canada; Ft. Nelson, Canada; Watson Lake, Canada; Whitehorse, Canada and Moose Creek, Alaska (or any portion)	
834	WESTERN AIR LINES, INC.	Lethbridge, Can.-Anchorage, Alaska	Calgary, Edmonton, Grande Prairie, Whitehorse, Canada; and Fairbanks, Alaska	2,00
		Lethbridge, Can.-Anchorage, Alaska	Calgary, Edmonton, Grande Prairie, Whitehorse, Canada, and Northway, Alaska	1,82
1048	WESTERN AIR LINES, INC.	Seattle, Wash.- { Nome, Alaska / Fairbanks, Alaska	Ketchikan, Juneau and Anchorage, Alaska; and (a) beyond Anchorage the intermediate point McGrath, Alaska and the terminal point Nome, Alaska; and (b) beyond Anchorage the terminal point, Fairbanks, Alaska.	2,29
1164	WESTERN AIR LINES, INC.	Los Angeles, Cal.- { Buenas Aires, Arg. / Rio de Janeiro, Braz.	La Paz, Mexico; Mexico City, Mexico; Guatemala City, Guatemala; San Jose, Costa Rica; Balboa, Canal Zone; Bogota, Colombia; Iquitos, Peru; Cobija, Bolivia; Santa Cruz, Bolivia, and Asuncion, Paraguay; and (a) beyond Asuncion the terminal point Buenos Aires, Argentina; and (b) beyond Asuncion the intermediate points Curitiba and Sao Paulo, Brazil and the terminal point Rio de Janeiro, Brazil.	8,44
		Buenos Aires, Arg.-Rio de Janeiro, Braz.	Montevideo, Uruguay; Porto Alegro, Brazil; Curitiba, Brazil and Sao Paulo, Brazil.	
1279	WORCESTER YELLOW CAB CO.	U. S.-Canada		No. Es
779	PAN AMERICAN-GRACE AIRWAYS, INC.		Board investigation re United States terminal at either Miami, Fla., Tampa, Fla., or St. Petersburg, Fla.	
**987	NU-PLANES FLYAWAY SERVICE		"Fly-away" delivery of planes from points of production to destination points in the United States, Canada and Mexico.	0

*Freight
**"Fly-away"
***"Fly-away" and Freight

Continental Makes Test Flight Over Kansas City-Denver Route; 7 Aboard

Preparatory to inaugurating air transport service between Denver and Kansas City around March 1, Continental Airlines Inc. conducted its first familiarization flight over the route Feb. 16 in a 14 passenger Lockheed Lodestar—the type of plane which will be used to inaugurate this service.

Aboard the plane for the test flight were: Paul Goedert, of the Airways Traffic Control Division, CAA, O. R. Haueter, vice president of Continental in charge of operations, C. E. Gast, superintendent of stations, Captains A. P. Shelly, F. R. Gray, M. D. Woodworth and Wade Johnson.

The plane left Denver, stopped at Topeka where the pilots made check approaches and landing. From there the flight went to Kansas City where similar checks were made. On the return trip, made at night, the pilots checked the alternate routes between Kansas City and Denver.

Continental was awarded the certificate for this route in December of 1942.

Applicant Would Blanket Southern Ontario With Big Network of Airlines

Twelve air routes in Ontario and part of Quebec covering a route distance of 2,508 miles, which would connect more than 50 communities now without scheduled airline services, have been applied for by Leavens Brothers, to the Controller of Civil Aviation at Ottawa, Canada.

The system as planned, completely blankets Southern Ontario and extends as far north as Cochrane and east to Montreal.

The announcement was made by W. T. Leavens, president, and C. R. Leavens, general manager, of Leavens Brothers Air Service Ltd., located at Barker Airport, Toronto. Operations could be started on the routes, the applicants said, on a regularly scheduled basis, as soon as aircraft are available, and as soon as it is the policy of the Government to issue the necessary permits.

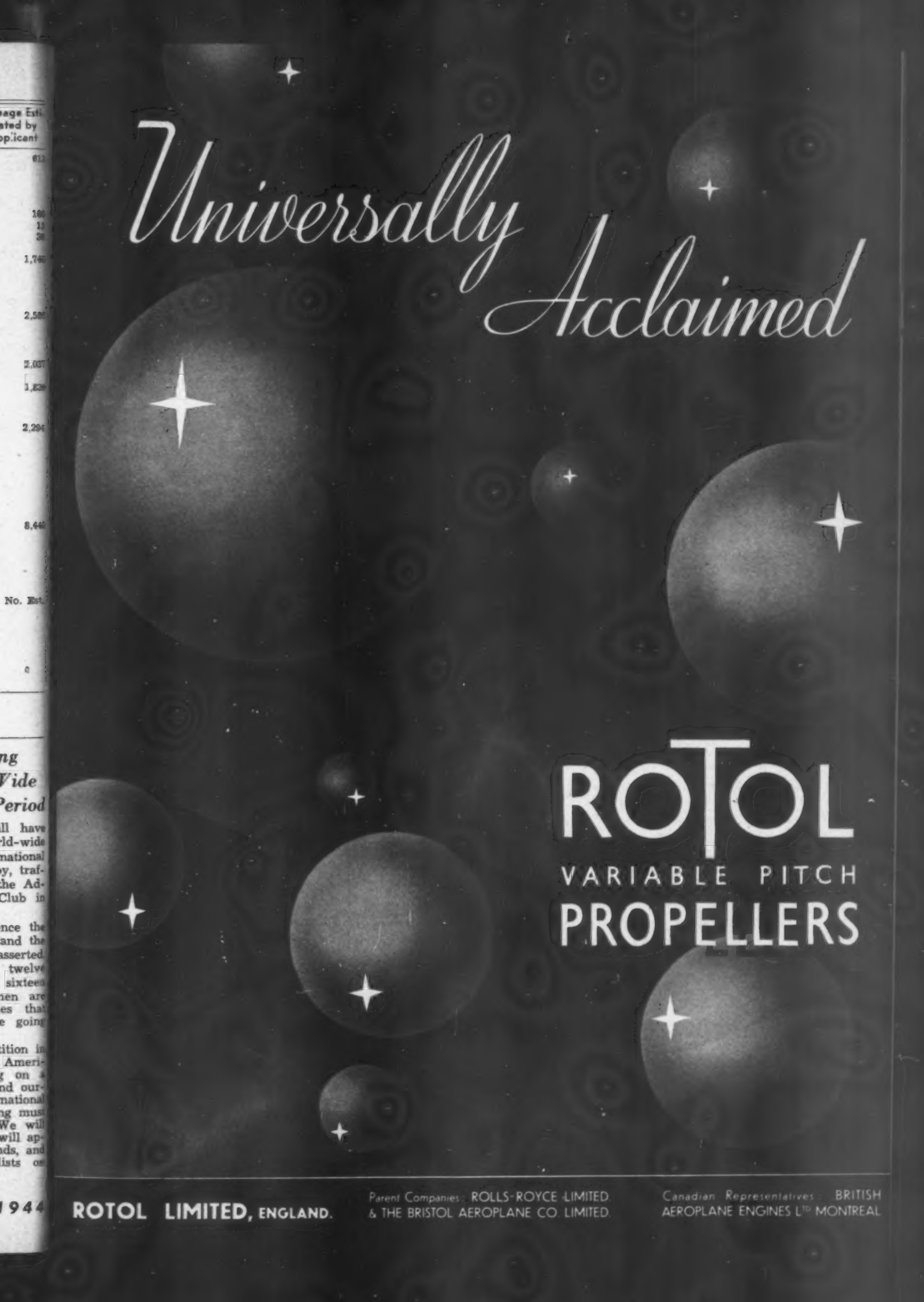
The network, as planned, is hinged on Toronto as the operating base, using the Island Airport because of its proximity to downtown Toronto. In addition, to providing regular air service for these communities, it is expected to act as a feeder service for Trans-Canada and other airlines.

Conroy Urges Advertising Men: Think in World-Wide Terms in Postwar Period

American advertising men will have to readjust their thinking to world-wide terms in the postwar era of international business competition, V. P. Conroy, traffic vice-president of TWA, told the Advertising and Sales Executives Club in New York earlier this month.

"Aviation inevitably will influence the buying habits of foreign nations and the selling habits of Americans," he asserted. "When we find ourselves only twelve hours from Rio de Janeiro and sixteen from Cairo. American businessmen are going to see trade opportunities that never existed before. They are going to do something about it.

"We can expect foreign competition in every foreign market . . . We Americans who have been competing on a national basis in the past will find ourselves competing on an international basis. This means that advertising must adopt a cosmopolitan outlook. We will have specialists who know what will appeal to the peoples of foreign lands, and who will advise our industrialists on how to meet these needs."


Universally Acclaimed
ROTOL
VARIABLE PITCH
PROPELLERS
ROTOL LIMITED, ENGLAND.
Parent Companies: ROLLS-ROYCE LIMITED & THE BRISTOL AEROPLANE CO LIMITED
Canadian Representatives: BRITISH AEROPLANE ENGINES LTD MONTREAL

Burke to Handle International Relations for American Export

AMERICAN EXPORT AIRLINES' Executive Vice President John E. Slater ended guessing in aviation circles on Feb. 8, when he announced the election of Thomas Burke as a vice president of the firm in charge of international relations.

The first of this year, Burke resigned as chief of the State Department's Division of International Communications, a post he has held since 1938. He will assume his duties with American Export following the completion of leave accumulated while in the State Department.

Burke's State Department position places him as a key figure in the international aviation picture.

At that post, Burke:

- Played a leading role in establishing U. S. domestic carriers in the international field as diplomatic liaison with Army and Navy air forces in inaugurating globe-girdling air routes now flown by Army and Navy Transport Commands.
- Directed the de Germanizing of South American airlines.
- Participated in the drawing up of the first official blueprint for postwar U. S. international aviation, as a member of the working subcommittee of the Interdepartmental Committee on Aviation, appointed by the President.

As with all diplomatic maneuverings, little is generally known of the details of Burke's work for the State Department, except for incomplete press "leaks" here and there.

Congressional friends of Burke, with a somewhat less "off-the-record" attitude toward the press than State Department officials, last week reported to *American Aviation* on Burke's record with the Department, noting that on behalf of the Government he has both bucked and promoted the interests of the nation's prewar international airlines, Pan American Airways and Pan American-Grace Airways. Spokesmen in Congress reviewed:

- In 1939 Burke testified on behalf of American Export Airlines before the House and Senate Appropriations Committees, urging funds for the line's trans-Atlantic service. Burke's position in support of American Export automatically placed him and the State Department in opposition to PAA, fighting the encroachment into its field.
- On the matter of de-Germanization of South American airlines, Burke's position was contrariwise to that of PAA and Panagra—international carriers which had not developed feeder lines in South America but had concentrated on more lucrative international air routes. German interests cemented themselve into western hemisphere economy and politics through development of internal airlines in South American countries. De-Germanizing raised the issue of control of internal lines. Burke projected a plan for the fullest participation in both capital investment and management by Latin American countries, thereby establishing a pattern for South American feeder systems of native control of stock with U. S. management.
- In the Caribbean situation, Burke opposed the granting of certificates to foreign carriers, pointing out—

  (1) That they were fully engaged under "charter" contracts; and

  (2) That their existing equipment was of questionable value, and if new equipment should become available it should be given to U. S. carriers.

This stand was in line with PAA's and Panagra's on the issue. Applying the proverb "possession is nine-tenths of the law," Burke posed in Government circles the question of whether foreign lines installed in the Caribbean with temporary certificates would ever be dislodged when the political weight of foreign nations, opposing the dislodging, was brought to bear. The U. S. granted KLM, Dutch national line, its Caribbean certificate with the explanation that it had aircraft to perform essential operations, and American carriers did not. An interesting aftermath, reported to *American Aviation*, is that KLM, after obtaining its temporary certificate, applied to the U. S. for aircraft. (The additional planes were not granted.)

- As a member of the Interdepartmental aviation group, Burke is widely known as the sponsor of a confidential minority report recommending that consideration be given to a federated operation by U. S. airlines in the event that conditions at the time of the peace did not make individual line operations feasible immediately.

"Leaks" to the press on Burke's proposal for a "chosen instrument" combine were followed a few months later by a public endorsement of such a pattern for postwar commercial aviation by PAA's president, Juan T. Trippe.

Omitted from Trippe's public proposal, however, were Burke's provisions—

(1) That there be a time limit on the federated operation;

(2) That the federated plan be considered only as an "alternative"—to prevent PAA from continuing its "monopoly" immediately after the war, and in the event that domestic airlines, launching for the first time after the war on international commercial air routes could not at the outset establish a case of economic feasibility to the satisfaction of the Civil Aeronautics Board—and their stockholders;

(3) That PAA's Atlantic and Pacific operations, bought up by the overall or federated group, undergo a stock re-distribution so that all participants would be equal shareholders.

Prior to joining the State Department, Burke was on the staff of the Secretary of Commerce.

He was State Department delegate to the U. S.-Canada Aviation Conference at Ottawa in 1939 and also to the North American Regional Engineering Conference at Washington in 1941. During the latter year he was designated chairman of the U. S. National Commission of the Permanent American Aeronautical Commission.

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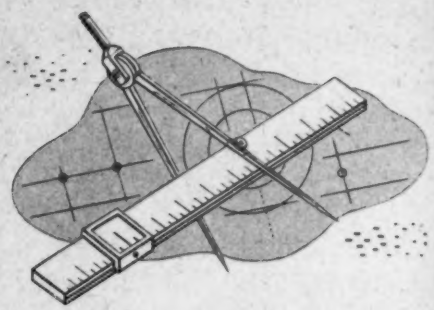

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Airline Commentary

We've been hearing many stories recently about how tough it is to get air transportation in Alaska . . . Some airlines, we were told, have passengers "backed up" as far as Nome, waiting for southbound transportation . . . C. O. Cary, general traffic manager of Alaska Airlines, sent us a poem the other day which seems particularly appropriate in view of this situation . . . The poem, which a passenger posted on the bulletin board in Alaska Airlines' Anchorage ticket office, was as follows:

You would give your bottom dollar to be out upon your way,
And you go and ask again about the flight.
But the airline agent shakes his head, "Flight canceled for today,
Better come and check with us tonight."

Every day the same old story, till your hopes all fade and die,
And your hair and whiskers both get white and long.
As with voice grown cracked and feeble, "In That Sweet Bye and Bye"
Or "I'm going home tomorrow" is your song.

So you loiter in the lobby, and you read the magazines,
And you walk the street and watch the passing throng.
Or you look at all the windows till you're weary of the scenes,
And you murmur to yourself, "Oh God, how long?"

If it's practice makes one perfect, and of virtues you desire
Those of patience and persistence to attain,
You will find all the experience and practice you require
In Alaska if you're waiting for a plane.

Seems to us that this little masterpiece could apply to quite a few places in the States, as well as Alaska . . .

●

The so-called "difference of opinion" between the Big Four (those great big monopolies) and the Little Twelve (those wee little lines) always makes good copy . . . And it has its humorous side, too . . . The other day we were talking to Hamilton Hale, counsel for American Airlines (big fellow) and Terrell Drinkwater, executive vice president of Continental Air Lines (little fellow) . . . As usual, everyone was kidding everyone else . . . So Hale leans over to us, points to Drinkwater, and says solemnly, "That's Regional Reginald" . . . From now on this name will probably be applied to all of the regional boys . . . So what we're looking for is a good name for the Big Four . . . Any suggestions? . . .

●

You'd be surprised what subjects get introduced into an oral argument before the Civil Aeronautics Board . . . Just the other day there was an argument in session on whether the Board has jurisdiction in the application of W. R. Grace & Co. for a U. S. terminal for Pan American-Grace Airways . . . Henry J. Friendly, attorney for Pan American Airways, expressed doubts as to whether a certain section of the Act gave CAB power to compel Panagra to extend its lines to Miami . . . Then came John Cahill, lawyer for W. R. Grace . . . Says he: "Now nothing is easier than to imagine doubts where none exists. At one time there was even a pamphlet published entitled 'Historic Doubts As to the Existence of Napoleon,' and I quote a few words from page 61 of the tome where the learned author of this highly dubious subject has this to say: 'I do not pretend to decide positively that there is not or never was any such person, but merely to propose it is a doubtful point!'" . . . And thus Napoleon, who wasn't even an applicant in the case, ended up right in the middle of a CAB hearing . . .

●

The CAB has lost a valuable employe . . . Stuart Tipton, assistant general counsel, has joined the Air Transport Association . . . Tip has been in the business a long time, was one of CAB's most experienced men, and his loss will be felt . . . But ATA needs a plenty good man to replace Howard Westwood, who did an outstanding job . . . We think they got a capable replacement

Eric Bramley

CONTINENTAL AIR LINES reports that January passenger revenue was up 10% over December and 6% over January, 1943. Load factor for the month was up 4% for both comparable periods. Continental's scheduled miles during January totaled 143,050, compared with 142,538 in December and 137,082 in January, 1943. Passenger revenue miles operated during January increased 10% over December, and were up 9% over January, 1943, while miles flown during January were up 3% over each comparable period.

TRANS-CANADA AIR LINES reports that passengers increased by 37,555 in 1943 as compared with 1942. The mail load was heavier by 1,417,795 lbs., and air express was up 458,768 lbs., the total weight being more than double that carried in 1942. Figures for the two years follow: passengers 142,001 in 1943 as against 104,446 in 1942; air mail, 3,726,607 lbs. in 1943 as against 2,308,812 in the preceding year; air express, 821,605 lbs., as compared with 362,837 lbs.

Women in Air Transport

(This is the eleventh of a series of articles on women who are doing an outstanding but little publicized job for the U. S. airlines).

SIX YEARS AGO Lois Lake was a clerk behind the counter of Western Air Lines' Salt Lake City ticket office. Today she manages the entire city traffic staff.

In her climb from bottom to top, Miss Lake has had many interesting experiences, done many interesting jobs. She was one of the first women to go out and contact prospective passengers, sell air travel plans, etc.—to engage in "street sales," as it is known in the industry.

She was so successful in the street job that WAL Vice President Tom Wolfe hired a corps of women to follow in her footsteps along the entire route. When men began to enter the military services, the women traffic representatives, known as "counselaires," moved in.

With an outstanding six-year record, Miss Lake wins friends and influences passengers so easily that neither realizes it. In the face of current priority trials and tribulations, she is one of the reasons the airlines face the postwar knowing that they have kept many of their old customers happy.

A graduate of Brigham Young University in speech and dramatic art, Miss Lake taught these subjects in Utah high schools until one day she decided she should "go into business." She studied stenotyping and landed a job reporting conventions up and down the Pacific coast.

Following this she helped set up the United States Employment Service in Utah, and the completion of that job signaled her entry into aviation with Western.

Miss Lake has flown probably 150,000 miles. And she swears that at least 25,000 of those miles must have been spent circling Salt Lake City on special charter flights arranged for civic groups.

COLONIAL AIRLINES reports an all-time record for passenger traffic was established during January on its route between Montreal and New York. Total passengers carried showed an increase of 76.3% over January, 1943. Airmail showed a 2.4% increase for January as compared with the same month last year. Air express was up 45.7%.

PAA Reduces Valuation Charges on International Air Express Shipments

Pan American Airways has announced major reductions in valuation charges and insurance premiums on international air express shipments. At the same time, it reports that Railway Express Agency, Inc., will collect shipments at the shipper door (at points where it operates "pick-up" services) for transportation to any of the destinations served by Pan American's international air express service. Both innovations in the service became effective February 15.

Shippers can insure their shipments from points of origin in the United States and Canada where Airwaybills are issued by the Railway Express Agency and in Canada by the Canadian Pacific Express Company and Canadian National Railways Express Department, until delivery to the consignee, at the same reduced premiums shown in the current tariff as applying from the International Airport of export to the Airport of Destination. This eliminates the premium of ten cents per one hundred dollars heretofore charged to cover transit in the U. S. and Canada.

It will no longer be necessary for shippers to appear in person at the Express Office to sign Pan American's Airwaybill. They need simply call Railway Express Inc., and sign a form carried by the truckman authorizing the local express office to complete the Airwaybill.

Reductions in insurance premiums have been made possible through recognition by the underwriters of the performance record of Pan American as well as improvements generally in air express service, company says.

Kemp Believes Many Areas Can Be Served by 'Feeders'

A. N. Kemp, president of American Airlines, Inc. believes that many areas in the United States can be well served by regional air transportation service, supplementing trunkline systems.

Kemp made this statement of policy in connection with American's application for new stops in the Oklahoma City area designed primarily to improve his company's transcontinental route.

"We appreciate that CAB's objective is to foster a sound economical air transportation system. Therefore, the Board may, and probably will, decide that in order that such a system can be established a number of local feeder and pick-up type applications for service should be considered by it," he declared.

"However, in order to eliminate any possible confusion concerning American Airlines' position, we believe that in considering route applications where the company is an interested party, the CAB should grant it certificates for the trunk line service proposed, and that the CAB may well certificate one or more of any other applicants proposing so-called feeder and pick-up air service of a regional type in the same territory.

"We believe that in cases where the Board does grant certificates to operators for the establishment of new local feeder and pick-up air service the certificates should be of a special nature, either temporary or experimental containing specific limitations and restrictions which will confine the various operators to the performance of types of service they have proposed in certain localized areas.

"It is natural that in considering the future interests and expansion of American Airlines we should vigorously oppose all applicants who would establish a regional air service simply as a device to create a trunk line service which might not be in the best public interest."

Recent CAB Orders Affecting Air Carriers

ORDER NO. 2639, DOCKET 980: Amended National's certificate for Route No. 31 changing designation of intermediate point Sarasota, Fla. to Sarasota-Brandenton.

ORDER NO. 2641, DOCKET 924: Denied request of Braniff for postponement of hearing.

ORDER NO. 2643: Granted Colonial temporary exemption to serve Massena, N. Y.

ORDER NO. 2644, DOCKET 413 ET AL.: Granted Braniff, Continental and Mid-Continent permission to intervene.

ORDER NO. 2645, DOCKET 469: Dismissed application of Braniff in this proceeding.

ORDER 2656, DOCKET 778 ET AL.: Extended temporary permit of KLM to operate between Miami and Curacao for three months from Jan. 31, 1944.

ORDER 2648, DOCKET 629 ET AL.: Denied Eastern permission to intervene.

ORDER NO. 2657, DOCKET 778 ET AL.: Extended temporary permit of Expreso Aereo Americano, S. A. to operate in Caribbean area.

ORDER NO. 2662, DOCKET 1296: Severed portion of application in Docket 1075 requesting service from Chicago to Detroit non-stop also Chicago to Detroit, via Toledo and assigned to Docket No. 1296 severed portion.

ORDER NO. 2662, DOCKET 629 ET AL.: Consolidated into proceeding TWA's docket 1031 as amended; and Docket 1296, C & S; denied Braniff's motion to exclude American's application No. 1255 (to consolidate Routes 7 and 21) denied alternate proposal to include Boston as Braniff's terminal.

ORDER NO. 2660, DOCKET 525 ET AL.: Consolidated in consolidated proceeding Docket 148 of New York & Bermudian, Docket 384 of Andrew J. Burke and Dockets 805 and 1169 of Southwestern Air Lines relating to service in Caribbean area.

ORDER NO. 2663, DOCKET 503 ET AL.: Granted National Airlines permission to intervene.

ORDER NO. 2665, DOCKET 1282: Granted Pan American Airways, Inc. temporary certificate to serve Willestad, Curacao as intermediate point between Cuidad Trujillo and LaGuaira, Venezuela.

ORDER NO. 2668: Denied Braniff's petition for reconsideration of Board's order in Texas cases.

ORDER No. 2674: Ordered withholding from public disclosure certain foreign agreements in Pan American Airways, Inc. exhibits relating to Panagra U. S. Terminal case.

ORDER No. 2673: Ordered withheld from public disclosure certain agreements in Panagra's exhibits relating to the Panagra U. S. Terminal case.

ORDER No. 2676, DOCKET 651 et al: Denied motion of Kansas City Southern Transport Co. asking postponement of hearing.

ORDER No. 2677: Approved agreement of Air Traffic Conference of America and various airlines regarding standard travel agents' publications.

ORDER No. 2678, DOCKET 932: Severed portion of American's Docket 932 requesting amendment of Rt. 30 to include Joplin, Mo. as additional intermediate point and assigned severed portion to Docket 1300.

ORDER No. 2682, DOCKET 534: Authorized Braniff Airways, Inc. to inaugurate service at Moline, Ill.

ORDER No. 2688: Granted American permission for expeditious use of Airport at Joplin, Mo. effective Feb. 19, 1944.

ORDER No. 2689: Granted Pan American Airways, Inc. permission for expeditious use of airport at Willemstad, Curacao beginning Feb. 7, 1944.

ORDER No. 2690: Severed portions of applications in American, Eastern, Hylan Flying Service, Inc., Union Airways, Inc., for service in New York state and assigned severed portions Docket Nos. 1311, 1312, 1313 and 1314 respectively.

ORDER No. 2691, DOCKET 934: Ordered withheld from public disclosure certain exhibits of Continental Air Lines, Inc. relating to Army contracts.

ORDER No. 2692: Granted Northern Cross, Inc. of Alaska authority to suspend operations indefinitely.

ORDER No. 2694, DOCKET 505: Denied petitions of TWA and Continental for permission to intervene.

ORDER No. 2693, DOCKET 505: Granted Essair, Inc., Cities of Dallas, Lubbock, Amarillo, Wichita Falls permission to intervene.

Air Line Dispatchers Hold Election by Mail

The Air Line Dispatchers Association reports that its recent mail ballot election of officers and voting on amendments to the constitution and by-laws turned out to be a "spirited affair."

Officers elected for the term of two years, effective January 1, 1944, were: Joe H. Gurr, president and secretary; Arthur Z. Gruitch, first vice president; and E. Donald Shugg, treasurer.

The membership voted favorably on an amendment authorizing five representative vice presidents, who are to be strategically located throughout the United States and its territories. Members elected to these offices were: R. U. VanDyke, council chairman, PCA No. 33, Washington, D. C.; A. A. Harlow, council chairman BNF No. 17, Dallas, Texas; C. W. Griffin, councilman NWA No. 2, Minneapolis, Minn.; M. A. Deutsch, council chairman PAA No. 24, Fairbanks, Alaska; and M. E. Carlin, council chairman UAL No. 5, San Francisco, Cal.

The Association reports that the possibility of ALDA affiliating with the American Train Dispatchers Association has been shelved. Several letters have been exchanged with David L. Behncke, president, Air Line Pilots Association, with regard to possible affiliation of all Airline Employes organizations. It is a logical and inevitable goal to have airline employes members of their own organizations, then have these organizations affiliated into a central organization, ALDA's bulletin asserts.

BOAC Planes Flew 12½ Million Miles During Record '43

Every day of 1943, aircraft of the British Overseas Airways Corporation flew the equivalent of one and one-third times around the world. The total mileage was 12,481,485 and represents a 25% increase over the previous year.

Detailed figures are as follows:

	Jan.-Dec. 1942	Jan.-Dec. 1943 (Prov.)	% of Increase 1942-43
Passenger Ton Miles ..	9,154,409	11,252,868	22.9
Mail Ton Miles ..	3,318,250	3,094,235	—6.8
Freight Ton Miles ..	4,760,398	7,886,809	65.7
Total Traffic Ton Miles ..	17,233,057	22,233,912	29.0
Total Miles Flown	9,967,379	12,481,485	25.2
Total Passengers Carried .	49,847	65,667	31.7
Mail Carried (tons)	1,093	1,271	16.3
Freight (tons)	2,139	3,975	85.8

At present the routes operated by the British Overseas Airways approximate 50,000 miles and assure communications between England and the British Commonwealth. For Security reasons not all of these routes can be made public but the list includes:

United Kingdom—Canada. The North Atlantic Return Ferry operates over the 3,200 miles route between the United Kingdom and Montreal. It was pioneered by British Overseas Airways which took over responsibility for its operation in September 1941. This British airline is the only service to have run in both directions over the North Atlantic through two winters. and is now running in its third. It carries back to Canada as required the delivery pilots and crews of Transport Command, R.A.F. and the aircraft return with Government passengers and freight.

United Kingdom—U. S. A. A flying boat service which is direct in summer but diverts to a winter route which includes Portugal, Bathurst, Nigeria, Brazil, Trinidad and Bermuda.

United Kingdom—Ireland (Foynes). Shuttle to connect with Pan American Airways and American Export Airlines trans-Atlantic services.

United Kingdom—Portugal (Lisbon). A shuttle service.

Additional routes are United Kingdom-Sweden and United Kingdom-Portugal-Gibralter-North Africa-Egypt.

From Cairo it is possible to travel via British Overseas Airways aircraft to Palestine, Iran, Iraq, Eritrea, Ethiopia Saudi Arabia, India, Anglo-Egyptian Sudan, French Equatorial Africa, Belgian Congo, West African Gold Coast, Uganda, Kenya, Portuguese East Africa and Madagascar.

South Africa—India. The Horseshoe Route, some 9,000 miles, flown regularly by Short Empire Flying-boats via Portuguese East Africa, Tanganyika, Kenya, Uganda, Anglo-Egyptian Sudan, Egypt, Palestine, Iran and Arabia.

South African Service. From Durban, the terminal of the Horseshoe Route, to Johannesburg.

British Overseas Airways services are directly controlled by the British Air Ministry and carry only priority loads.

Announcement has been made by CAA of the release of Safety Regulation No. 157 which is offered as amendment No. 1 to the December, 1942, edition of ANC-5 which has been approved by the Technical Committee of the Army-Naval-Civil Committee on Aircraft Design criteria. Although the general content of ANC-5 remains substantially the same, several important revisions have been made to the text and to the mechanical properties tables of certain materials.

DAWN OF THE AIR AGE
FLAP FLAP!
A TORQUE
SECOND LIEUTENANT (WITH PRIORITIES)
"ROGER!"
MILWAUKEE, ST. PAUL & RANGOON AIRLINES
The Plastic Sunliner
AIR POCKET
ULTRA DELUXE SEADROME
AN AIRLINE STENOGRAPHER'S NIGHTMARE
SHE WAS A LITTLE CONFUSED AFTER ONLY A MONTH IN THE BUSINESS

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An Airline Stenographer's Nightmare, Pictured by Eldon Frye, TWA Cartoonist.

Decentralized Airport Plan Favored by UAL's Architect

THE AIRPORT of the future should be the gateway to a city, reflecting the character and progressiveness of the community, Albert F. Heino, United Air Lines architect, declared in an address before the recent Midwest Airport Managers' Conference in Fort Wayne, Ind.

Heino

"The architecture of your airports should be representative of your locale and show the traveller at a glance something about your people," he told the 150 airport managers assembled. "The airport of the future will be a community in itself and offers an opportunity for design on the grand scale."

Heino views the postwar airport problem from two general approaches:

1. The Central plan, which is a continuation of the present method of concentrating all terminal activity in one location from which the airline passengers are disbursed to plane berths, many of which are remote from the central terminal. Baggage mail and express is handled in much the same way and involves transportation to and from the remote airplane and the terminal building. The alternate under this philosophy is the "production line" processing planes through or around the terminal.

2. The Decentralization plan, which permits the passengers, their baggage and the mail and express for a given airplane to go directly to the airplane without passing through a central terminal building. Such a plan permits a separation of the general public and airline passengers not easily attained in the Central plan. It simplifies the handling of a large number of people by serving them in smaller groups.

"In my opinion, as the volume of business, both passenger and cargo, increases, greater difficulties will develop in Plan No. 1 than in No. 2," Heino said. "Plan No. 2 should adapt itself to any terminal, large or small."

He stressed the importance of starting any airport project in an area "large enough to permit satisfaction of future demands."

"Wise planning and control of its development will enable every community to achieve a unified, simplified group of buildings from a small beginning," he added. "All that is necessary is the ability to project yourselves into the future and envision a development for your community based on reasonable forecasts."

Heino observed a "definite" relationship between runway capacity and required ramp space at the terminal. Allowing 30 minutes in and out per plane, it is necessary to provide a number of plane berths equal to 25% of the runway capacity, he estimated.

"While this figure might seem high, allowances must be made for irregularities in schedule and varying sizes of aircraft," he said. "It also makes an allowance for averaging terminating and through trips. In a determination of lineal ramp required we have assumed an average distance of 160 ft. per plane, which is only 15 ft. in excess of the turning circle of the DC4. As an example, an airport having a runway capacity of 120 movements per hour will require berths for 30 planes at the terminal; allowing 160 ft. per plane, the lineal footage required is 4,800 ft. These 30 planes will have a capacity of 1,500 people. The same number of people may be accommodated in 56 ft. of gate space at a railroad terminal and be carried in four combination pullman and coach trains of nine cars each. This fact alone indicates that a different approach to the design of airport terminals should be adopted over the former duplication of railroad terminal design at our airports."

Principal advantages of the Decentralization airport plan were listed by Heino as follows:

1. Avoidance of congestion.
2. Ability to expand easily with expanding operations.
3. Separation of general public and airline passengers, simplifying handling by personnel.
4. More personalized service to patrons by the airlines.
5. Incentive to competition among operators, resulting in better service.
6. Direct control of its own operations by each airline.
7. Possibilities of a civic development at the airport, independent of, but contiguous with, the airline unit terminals, divorcing the problems of operations from such development.
8. Convenience to the airline passenger by providing him the simplest and most direct access to his airplane from his ground transportation.
9. Fewer opportunities for mishandling of passenger baggage and cargo by airline personnel through localizing the operation.
10. Economy—long period amortization of investment; low unit cost for expansion.

Heino envisions the terminal as beginning with a series of one-story units interconnected to each other and to the central public building. It expands as a one-story group of buildings until such time as the traffic demands a separation of passenger and cargo handling at different levels.

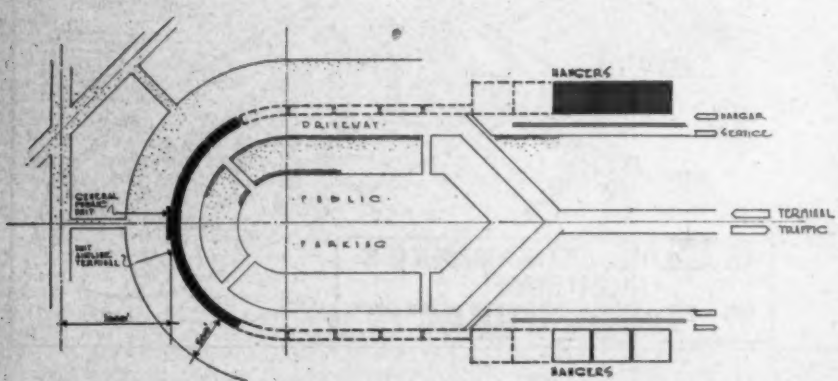
Tunnel in Plan

A tunnel under the unit terminals is connected to the basement of the public center. In this tunnel are located all of the utilities necessary to serve the entire terminal group with "spoke" tunnel connections provided to ramp positions of the planes. As the plan expands it will be necessary to include transportation for passengers to various parts of the terminal. This may be done by electric cars, tractor trains, moving sidewalks or similar conveyances on one side of the tunnel. The opposite, or field side of the tunnel would be a raceway for tractor trains carrying interconnecting cargo, cargo deliveries to individual airlines and also transportation of mail to and from the central Post Office in the public building.

The ground floor of each unit contains a waiting room, ticket office, baggage and cargo room, offices, toilet facilities and access to the tunnel and observation deck above. This area is designed to provide the passengers with only the services necessary to expedite his enplaning or deplaning. Deplaning passengers are separated and do not go through the waiting room but leave the field through a passageway leading to a waiting surface transportation.

The roof deck is continuous over the units and is used by the public and well-wishers of airline passengers. It is connected directly with the second floor of the public building through a system of terraces.

When the passenger arrives at the airport in his car, a limousine or bus in time for the departure of a specific flight, he goes directly to the airline terminal of his choice and within a very short distance, he checks his bag, buys a ticket and enplanes immediately. If the flight is a continuing one, the deplaning passengers have left the plane by a separate path and picked up their baggage on the way out. As each airline requires more ramp space, it will lease more units and localize its business by direction of flight or by flights. Access to the interconnecting tunnel and to the observation deck is provided at each unit.



Drawing of One of Heino's Airport Plans

BOWSER SERV-A-PLANE

Triples speed of fueling planes

Following the installation of a Bowser Serv-A-Plane at the Municipal Airport in Fort Wayne, airport officials stated, "We're now able to fuel three planes in the time it used to take to fuel just one."

Compact, entirely self-contained, durably built, easily installed, simple to operate . . . Serv-A-Plane is the right installation for medium and smaller airports, or for fueling smaller planes.

For greater capacity requirements, there is a wide range of Bowser above-ground and under-ground fueling equipment, up to the high-speed systems found at major airports which deliver as much as 4,000 g. p. m. There are also marine, mobile, portable and centralized types in different sizes to meet virtually every possible need.

Whatever the type or size of Bowser Aviation Fueling System, it is designed to deliver only **DRY, CLEAN, SAFE FUEL.**

BOWSER, INC., Fort Wayne 5, Indiana

Serv-A-Plane's a Complete Airport Service Station *Entirely Self-contained*—Includes power pump, motor, the famous Bowser Xacto Meter, air release, strainer, centrifugal water separator, hose reel, etc., as well as storage place for lubricants, small tools, record books, fire extinguisher and other items.

ACCURATE MEASUREMENT—With Xacto Meter, the world's most widely used meter, every drop of liquid must be measured *and* recorded before it is dispensed.

COMPACT, DURABLE, EASILY INSTALLED—A space-conserver, Serv-A-Plane measures only 56 x 21 inches at the base. The steel cabinet and braced, welded, channel iron frame are sturdy and rigid. All operating parts, of selected metals, are precision made and fit. As easily installed as a gasoline pump; connect the supply line from the storage tank, and the electrical line . . . and it's ready to operate.

SIMPLE TO OPERATE—Flip the switch to start the motor-operated pump . . . pull out the hose . . . dispense the amount desired . . . step on the pedal to operate the motor-driven hose rewind . . . stop the motor.

CLEAN, DRY, SAFE FUEL—A fine-mesh bronze strainer, built into the air release, removes all dirt and foreign particles. The Bowser Centrifugal Water Separator, long-proved in airport fueling systems, removes free water.

BUY WAR BONDS

BOWSER

AMERICA'S FOREMOST BUILDERS OF AVIATION FUELING EQUIPMENT

Airline Rounds

Olsen

Washburn

American Airlines announces that **Ralph Damon,** vice president and general manager has been elected a trustee of the New York Trust Co., **Delos W. Rentzel,** director of communications, has been elected president of Aeronautical Radio, Inc.; **Capt. John Digby Lewis** has been appointed superintendent of the airline's transatlantic division; **Norman A. Bierson** has been appointed operations engineer; **David B. Shaughnessy** has been named traffic manager at St. Louis.

George R. Cushing, operations manager of Delta Air Lines, has been appointed a member of the Georgia State Aviation Commission.

Transcontinental and Western Air reports that **Thomas Sanford Duffy, Jr.,** has been named traffic representative for the Boston area: **Mary Lee McCoy,** a TWA hostess for four years, has been named chief hostess of the Eastern division; **H. W. Crowther** has been appointed assistant system superintendent of maintenance with headquarters in Kansas City; **V. A. Blackwell,** formerly supervisor of service, is now supervisor of overhaul; **W. P. Dahnke,** formerly supervisor of overhaul, has been appointed staff assistant at Kansas City; **E. T. Huff** has been named supervisor of service; **G. A. Putnam** has become maintenance foreman at Burbank, Calif.; **K. K. Kay** has been appointed foreman of maintenance service at Kansas City.

Capt. Weldon E. "Dusty" Rhoades, on leave of absence from United Air Lines, is reported to have become Gen. Douglas MacArthur's personal pilot.

Rhoades

McCoy

Trans-Canada Air Lines announces the appointment of **J. H. Tudhope** as operations manager with headquarters at Winnipeg; **Herbert W. Seagrim,** formerly chief pilot, Western Division, has been named assistant superintendent of flight operations; **Ernest W. Wright** has been appointed fire marshal for the airline.

Thomas H. Reid has been named maintenance superintendent of Pan American Airways; **Rirhard Washburn** has been promoted to chief inspector at the airline's transatlantic hangars to fill a vacancy caused by the transfer of **Peter R. Gregor** to Pan American's Alaska Division shops at Seattle.

Pennsylvania - Central Airlines announces that **Harold A. Olsen** has been named assistant to J. J. O'Donovan, vice president; **B. J. Vierling** has been appointed chief engineer of the airline; **R. O. Smith** has become superintendent of maintenance; **Harry S. Pack** has been appointed director of functional engineering and air cargo development work; **L. J. Bregenzer** has been promoted to buildings and facilities engineer; **A. P. Martin** has been named office manager; **Walter H. Hedrick, Jr.,** has been appointed supervisor of food service; **Stanley Kobe** has been appointed communications supervisor of the Washington general offices. PCA also announces that **Stanley C. Morris,** general counsel for the airline, has been elected vice chairman of the Aviation Insurance Committee of the Insurance Section of the American Bar Association.

Reid

Gregor

Cushing

Duffy

Colonial's Foreign Mail Case Up For Hearing March 17

Hearing on the petition of Colonial Airlines, Inc., for a redetermination of a fair and reasonable rate of compensation for the carrying of mail over its foreign airmail route No. 1 has been tentatively set for March 17.

Vincent L. Gingerich, CAB examiner, in a report filed recently, stated the following issues had been raised by the Board's show cause order and the exceptions filed by Colonial:

1. Is the petitioner's operations during the 7-month period from February 1 to August 31, 1943, a fair basis upon which to arrive at a performance factor and an estimate of the nonmail revenues and expenses, which bear a direct relation to the revenue miles flown for the future; if not, what period should be used?

2. Should depreciation allowances include an allowance on the "bonus" of $25,390.53 which is the amount paid in excess of the net depreciated value of the DC-3 aircraft purchased from Canadian Colonial Airways, Ltd.?

3. Should the depreciation policy established by the Board, requiring that DC-3 aircraft and engines be depreciated on a 5-year service life basis with a 10 percent residual value for aircraft and a $500 residual value for engines, be followed by the petitioner, and, if not, what depreciation rates should be used?

4. Should the monthly payment of $540 to Canadian Air Express Ltd., which is over and above the actual operating expenses incurred on behalf of the petitioner, be allowed as a proper expense, if not, what amount should be allowed?

5. Is the petitioner's flight equipment maintenance, ground equipment maintenance direct, ground operations and accounts 601 and 602 costs excessive, if so, what amount is a reasonable expenditure?

6. Is the petitioner's general and administrative expense excessive, if so, what amount is a reasonable expenditure?

7. Is the investment allocated to petitioner's commercial services in the show cause order reasonable, and, if not, what allocations should be made?

Traffic

UNITED AIR LINES reports that additional coast-to-coast cargo planes was largely responsible for a 62% increase in mail loads in January as compared with the same month last year. In the month, the airline flew 1,190,523 mail ton-miles as against 733,198 in January, 1943. Express ton-miles totaled 319,260 as compared with 282,274 during the same month last year, a gain of 13%.

NORTHWEST AIRLINES carried a total of 143,293 express pounds during January, an increase of nearly 20,000 lbs. over the total for the same month a year ago. January loads were carried a total of 83,026,397 express pound miles.

UNITED AIR LINES reports that revenue passenger miles flown in January gained 53% over those flown the corresponding month of 1943. January's operations totaled 31,592,10[illegible] revenue passenger miles as against 20,536,6[illegible] for January of last year. Airplane miles were 1,854,750, as compared with 1,603,35[illegible] a gain of 16%.

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Mfrs. Again Urged: Design for Maintenance

Foley Says He's 'Not Through Harping on Subject'; Discredits Design Engineers' Arguments

By E. J. Foley

WHICH IS THE LESSER expense to the airline—an airplane sitting on the apron for four hours unattended but ready to go or one sitting in the hangar hidden in a heap of mechanics ready for the run only after three hours and 50 minutes labor of each of our dozen men?

Foley

Normal peacetime flying will not give more than nine hours per day utilization so why make such a fetish of simplicity and speedy service?

We direct these *simple* questions to some *simple* people—design engineers who have recently told us how happy they are that we have grown up and stopped harping on *maintenance*.

If these people cannot answer these two questions, they have a lot of nerve implying that our attention to maintenance is unnecessary and childish. If they can and do answer them frankly and honestly, they will understand why we are so concerned. Whether they can or cannot, these words are written to assure them that we are *not through* harping on maintenance.

Assuming that our expressions in the past had merit and we were on the right track as some of our airline friends told us we were, then we must stay with the project until all approvals or a single disapproval are obtained. Frankly, maintenance as a guiding factor in design is hard to sell. Since none deny its importance and necessity, we must assume that the reluctance to apply it thoroughly and actively in every detail stems from a failure to recognize the application or a "line of least resistance" approach in design thinking. We are reasonably sure that it is the former.

The war and its aircraft expansion has helped this cause along. Yet with the acres of crops to be weeded, the cleared patches are hardly noticeable. General McMullen of the Air Service Command recently spoke to the Metropolitan Section of the Society of Automotive Engineers and told them some of his problems along these lines. By driving home some good points, let us hope that he has added the weight and importance of his experience to the battle. The sincerity of his concern about the lack of maintenance thought in aircraft design should dispel some of the manufacturers' indifference.

We recently got a good look at one of the newer military transport aircraft. This was one that General McMullen has not had to tangle with yet; we hope he can avoid it *for the duration*. The ship had recently been afflicted with an engine type change and installation revision to simplify it and improve operation. We were lucky not to have been shocked by the original version if what we saw is the short and simple form.

Something had certainly backfired. We'll bet that for every item removed, three were added. Removing the cowling is about as effective for inspection purposes as opening the outside case on your grandfather's watch. It is strictly a closed book.

Our guide showed us the booster coil. No simple process, mind you, you have to peer up through a small aperture in the bottom side of the nacelle and barely visible at the extreme top of the nacelle is the coil. We were afraid to ask how you went about changing this unit. Instinct tells us that the direct approach is the removal of the engine. Another sacrifice of efficiency and economy on the altar of misdirected design effort. But concern over such details is childish—does this bagatelle affect the aircraft's splendid performance? No sir, it does not *so long as the booster coil is performing!*

We saw a little confusion over the starter, too. Of course it was only a *little* thing; you just have to disassemble the starter piece by piece to remove it. Installation must proceed in the reverse gruesome stages.

For use in remote locations where servicing may be required and no service stands available, the manufacturer considerately provides a set of platforms fitting on either side of a nacelle. One of the possible uses of such a platform is for the removal of an engine cylinder. Cylinder failures occur from time to time and even front cylinders in a double bank engine have been known to give trouble.

But now comes the prize! To remove a front cylinder requires removal of the nose cowl ring which can only follow the removal of the propeller. What happened? we're falling! Oh yes! we forgot to mention that the platform on which we were standing to change that cylinder attaches to the nose cowl ring *which we removed to get at the cylinder*. This looks like a deliberate trap.

When you stop to review similar problems on almost every type of aircraft, it is little wonder that some of the maintenance people suspect intentional building-in of difficulties. Until we are vested with the responsibility of keeping aircraft in safe operating condition, it may be difficult to understand the import of *tremendous trifles*. Yet there is slim hope that all engaged in the design can be educated by practical experience in the operation.

An entering wedge for such an educational program is the proposal of Pan American's Priester to "borrow" manufacturers' design engineers for a year of operating training as flight engineers and mechanics. But imagine how tremendous would have to be the scale of such a program to reach every individual concerned. The combined efforts of all the airlines might make a good-sized dent in the job, though, in the postwar period.

We have heard that one of the reasons certain manufacturers are becoming interested in maintenance is that as their function it would give them the source for such education in their own back yard. However, if our designer friends are representative of the industry opinion, this must be a *very minor reason*. One of the large aircraft manufacturers is operating a military airline with its own craft. Such simultaneous parallel operation should be reflected in improvements of product, but only time can tell.

The past has seen a very gradual trend toward better aircraft maintenance-wise, through liaison between manufacturer and operator—written and spoken. In our opinion the "routine channels" of large organizations through which such recommendations must pass are so lengthy and devious as to take all the edge off many sharp ideas. However, this technique must be developed, not dropped. It is the only presently effective medium for translation of operating "know how" into design.

It is not illogical that several readers have chosen to parallel the aircraft and the automobile industries from the standpoint of service satisfaction. The contrasts between the two are too great to be

(Turn to page 92)

Propeller 'Proving Ground'

This new propeller testing facility is in operation at the Caldwell, N. J., plant of Curtiss-Wright Corp. It can accommodate the testing of warplane propellers up to 30 ft. in diameter, and air-cooled and liquid-cooled engines of more than 5,000 hp. It duplicates airflow and vibration conditions similar to those encountered in flight.

Chicken To-day... Chicken *Feathers* Tomorrow?

This often spoken expression may well become a grim reality for many organizations now 100% in war production. Only foresight, good management and careful planning for the future will assure a profitable return to normal business channels after the war.

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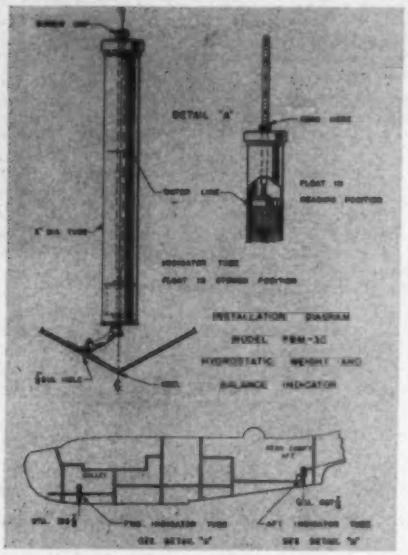
Equipment News

Weight and Balance Indicator

An automatic weight and balance indicator, known as the Hydrobal, which simplifies loading operations and reduces the loading costs of flying boats, has been developed by The Glenn L. Martin Company, of Baltimore, Md. Already in use on the Martin Mars, and on other Martin flying boats, the Hydrobal, which utilizes the hydrostatic laws of Archimedes, almost automatically insures the proper



loading of aircraft. A sort of super-accurate Plimsoll's mark (the load line which is painted on the side of all British and American surface vessels) brought inside the hull for easy reading, the Martin Hydrobal makes use of two well known facts: (1) that the distance from keel to waterline (draft) of a boat hull is proportional to its loaded weight; and (2) that the angle at which the hull floats (trim angle) is proportional to its loaded center of gravity. The Hydrobal provides rapid and accurate readings of draft and trim angle which can be quickly plotted on a calibrated chart to obtain loaded weight and center of gravity.

G-E Speed Variator

In the laboratory of Lockheed, testing work requiring wide-range, highly flexible adjustable drives is aided by the use of a speed variator, a product of General Electric. Mounted on a small hand truck, the variator consists of an a-c to d-c motor-generator set with the necessary controls, the unit provides the necessary range of speed by the adjustable-voltage control method. Four d-c motors of various ratings are also carried on the truck.

Counterbore and Spotfacer

An adjustable blade Counterbore and Spotfacer is announced by the Robert H. Clark Co., 3424 Sunset Blvd., Los Angeles 26, Cal. The tool differs from conventional models in that instead of a group of fixed-diameter bits interchangeable on a standard shank, the blades themselves are adjustable to any diameter within the broad limits of the tool.

'Electronic Ice-Pick'

Perfection of a new "electronic ice-pick" to give airplane pilots accurate and instantly variable control of their de-icer equipment in combating every type of ice formation is revealed by the B. F. Goodrich Co. and the Eclipse-Pioneer Division of Bendix Aviation Corp.

The new method is technically known as a "manifold solenoid de-icer system with electronic control." Using the rubber "boots" originally developed by Goodrich and now standard winter equipment on American commercial and military planes, the new system makes possible a more selective method of inflating and deflating the tubes along the wing edges so that ice broken loose by the pulsating rubber can be carried off by the slip stream.

Snap Gages

Vard, Inc., Pasadena, Calif. announces manufacture of snap gages with John-Sons rolls, designed to check both right and left-hand threads. The improved Vard snap-gage frame, which has been used to hold these rolls, has a special grip moulded-to-hand contours, and wide machine pads for bench stand set-up, and is made of a special high grade, high strength cast iron with low reaction to temperature changes. The unit checks such critical dimensions in threads as pitch diameter, thread angle and lead.

Portable Power Unit

The distribution of this portable power unit, recently produced by the Harman Rotary Pump Company, is handled exclusively by Pacific Airmotive, 409 North Brand Blvd., Glendale 3, Calif. The unit is assembled on a rubber-tired truck chassis and employes a 4 hp. gasoline

engine and a 50-ampere, 30-volt shunt wound Harman generator complete with accessories. It is said to provide full capacity to start aircraft engines, check and test radio equipment and gun turrets, and recharge the batteries while installed. The ruggedness of the unit plus its full 400 amperes, 1500 watt capacity, are said to have enabled it to serve well on large aircraft as well as small.

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Industry Has Its Cutbacks Despite Boom

Retooling Causes Temporary Unemployment Only, In Most Cases; Rumors Harmful

By BARBARA B. C. MCNAMEE

ALTHOUGH aircraft manufacturing leads all industries in its scheduled expansion during 1944, it has a share in the cutbacks which are becoming almost an intrinsic part of the production program. Contracts have been reduced, cancelled, and plants have been retooled for new production, resulting sometimes in greater, rather than less total employment.

But with the change in manufacturing programs, both real reductions in employment at a given location or mere rumors of a cutback have presented serious problems for industry.

American Aviation has compiled case histories on cutbacks in the aircraft industry from a recent report of the Office of War Information.

In the Curtiss-Wright plant at St. Louis, retooling put 1,500 employes out of jobs. But company officials say that at the end of the retooling, employment at the plant will climb steeply and all workers will be recalled.

Rumors, in some instances, have created disturbances equivalent to contract cancellations. In Baltimore, Md., a story circulated that a "local aircraft factory" would release 10,000 employes. The fact that the plant was at the time increasing its employment roll by 4,000 workers and did not lay off a single person belied the rumor. Yet a serious unrest pervaded the labor force.

A cancelled contract caused Piper Aircraft Corp. at Lock Haven, Pa., to release 298 workers while at Tulsa, Okla., the Douglas Aircraft, Co. plant, largest employer in the area, laid off 3,700 workers during December and company officials expect 4,000 more to be let go by July.

These reductions however do not represent an overall slackening of labor requirements. The Piper Aircraft employes were nearly all reemployed in other war work: 184 were placed by U.S.E.S., others by their own "job-shopping" and 34 were rehired at the Piper plant soon after. A small number of women workers left the labor force. In the case of Douglas, the present reduction of the labor force is caused by retooling due to a shift in production to cargo planes. All but 3,000 of the workers will be rehired.

The impact of production shifts has in some cases been modified by advance notice, the substitution of allied types of contracts and a prompt routing of the labor force to new employment. When Thompson Products, Inc., without warning received cancellation notices from an aircraft engine plant, 14,500 employes producing valves and engine parts were threatened. Rumors intensified the situation. For an interim period, Thompson management reduced its work schedule from 13 days every two weeks to 5½ days a week. Some workers were dismissed. The shutdown trend was shortly afterward reversed by new orders and the company had to appeal to U.S.E.S. for more workers than had been released by the contract cancellation.

At Bendix Aviation Corp. plant in Philadelphia a layoff on Jan. 8 due to "altered requirements of the military forces" was immediately dealt with by 35 U.S.E.S. interviewers. A majority of the 1,000 released employes were placed in other war jobs before a day had passed. When an "easing up" of blimp construction made 400 workers available in the Goodyear Aircraft Corp. at Akron, they were transferred to another company plant in the same city to work on Navy fighter planes.

A reduced demand for output of aluminum extrusions is traceable to a government order limiting reimbursable inventories to a 60 day supply. Five nearby war plants as well as several mining operations hired most of the displaced aluminum workers. As a result of the wild rumors, the company found that turnover was at such a high level it soon became possible to rehire 111 of the discharged workers.

Top War Manpower Commission officials told *American Aviation* that cutbacks and rumors of cutbacks frequently had the opposite and more beneficial effect on workers in other unaffected plants in the area. It was found that turnover rates dropped sharply in many cities when cutbacks of varying size had occurred.

Despite the contract cancellations and curtailments that are occurring, WMC officials point out that employment in munitions production is expected to remain at the January level through July of this year. Increased demands for manpower are scheduled in aircraft, radar, landing craft and ship repair industries.

Weighing a Flying Fortress

Every 100th bomber that rolls from the assembly line of Boeing Aircraft Co. is weighed to determine if the center of gravity falls within limits prescribed by the designing engineers. This view shows the three scales, designed by Boeing engineers, in position for the weighing operation.

Annual Piper Report Stresses Company's Trainer Production

In his annual report to stockholders, W. T. Piper, president-treasurer, Piper Aircraft Corp., Lock Haven, Pa., stated that virtually the entire output of the plant was delivered to the Army Air Corps and the Signal Corps. Approximately 37.5% was represented by the Army plane, known as the L-4, "a somewhat modified and improved version of our standard low-powered trainer airplane," with the exception of a relatively small amount of Navy AE-1 or ambulance planes.

Balance of the production, representing the greater portion, consisted of material of a restricted nature.

Net sales for fiscal year ending September 30, 1943 were $11.478,597. Net profit before taxes was $3,228,178; provision for Federal and State taxes (less postwar refund) and renegotiation of war contracts was $2,750,000; provision for contingencies, postwar adjustments, etc., was $162,920. Amount transferred to surplus totaled $315,258, equivalent to $2.25 a common share.

Balance sheet report, September 30, 1943, showed assets of $3,203,096. Current assets were $2,382,214; postwar refund of Excess Profits Taxes $136,789; fixed assets, less reserves for depreciation and amortization $625,394. Current liabilities were shown at $1,663,217; term obligations $179,-179. Capital stock, npv, $165,616; common stock $1-par, $140,406. Paid-in surplus was $220,926; surplus from operations $833,749.

Mustangs Raise Hell in Heavens

Seven miles upstairs, Yank pilots ride the wings of fierce-charging Mustang fighters, dealing death to Nazis desperately trying to intercept our high-altitude heavy bombers. Here in the arctic cold of the stratosphere a chronicle of victory is sky-written by white vapor trails and by the searing flame of an enemy plane in its last screaming earthbound plunge. The men and women of North American Aviation are proud of the "angels from hell" who pilot these avenging P-51 Mustangs—proud, too, of their own vital part on America's production front.

North American Aviation *Sets the Pace*

We make planes that make headlines . . . *The B-25 Mitchell bomber, the AT-6 Texan combat trainer, the P-51 Mustang fighter (the A-36 fighter-bomber), and the B-24 Liberator bomber. North American Aviation, Inc. Member, of the Aircraft War Production Council, Inc.*

WPB Suggested as Authority To Administer Reconversion

RECONVERSION PROSPECTS and problems have resulted in two plans for War Production Board supervision of the return to civilian production. The Board's experience with orders transferring industrial facilities and inventories from peace to war production are the basis for suggesting WPB as the authority to plan and administer the reverse process.

Vice Chairman for Civilian Requirements Arthur D. Whiteside proposed that WPB be reorganized with two parallel vice-chairmen, one for military requirements and the other for civilian requirements. Both officials would report to the Executive Vice-Chairman and would resort to an Appeals Board on conflicts of policy. At the operating level, the industry divisions would contain representation of both the civilian and military requirements vice-chairmen.

Different in form is the plan to give WPB's Production Executive Committee authority to determine when, where and how to proceed with civilian goods production. Informed sources indicated this plan will probably be accepted since it is favored by WPB's top three: Nelson, Wilson and Krug; and has received tentative approval from the Bureau of the Budget which is preparing the necessary forms.

The drafted proposal includes a subcommittee to formulate plans for referral to the top committee and to oversee administration. It is understood that preliminary operations toward industrial reconversion would begin with the release of available materials through Smaller War Plants Corp. to small manufacturers.

Regardless of form each of these proposals recommends that the War Production Board, which has occasion to relax or cancel its detailed orders for one or another industry, carry out a broad program to establish a fair and gradual return of industry to peacetime operations.

While drawing no conclusions, Chairman Donald Nelson recently proposed to an Industry Advisory Committee these questions: how long should war controls continue; how to give manufacturers whose war contracts terminate at different times an equal chance at the civilian market; what rate of return to civilian production and what policy for newcomers in an industry. For the present, War Production Board thinking on what to do is obscured by the more basic question of whether that agency will be given a major role in the reconversion field.

PACIFIC AIRMOTIVE, a division of the Airplane Manufacturing and Supply Corp. of California, is opening a branch in Kansas City, Mo. William E. Briece has been appointed division manager.

DOUGLAS AIRCRAFT CO. announces that Russia has received under lend-lease more than 2,000 attack bombers of the A-20 Havoc type. Present output of the Havoc series, in large scale production since October, 1939, has reached "its most accelerated pace."

The above group of engineers of the aircraft industry, were photographed at the Hotel Chase, St. Louis, where they met February 1st and 2nd, as members of the Airplane Technical Committee of the Aeronautical Chamber of Commerce.

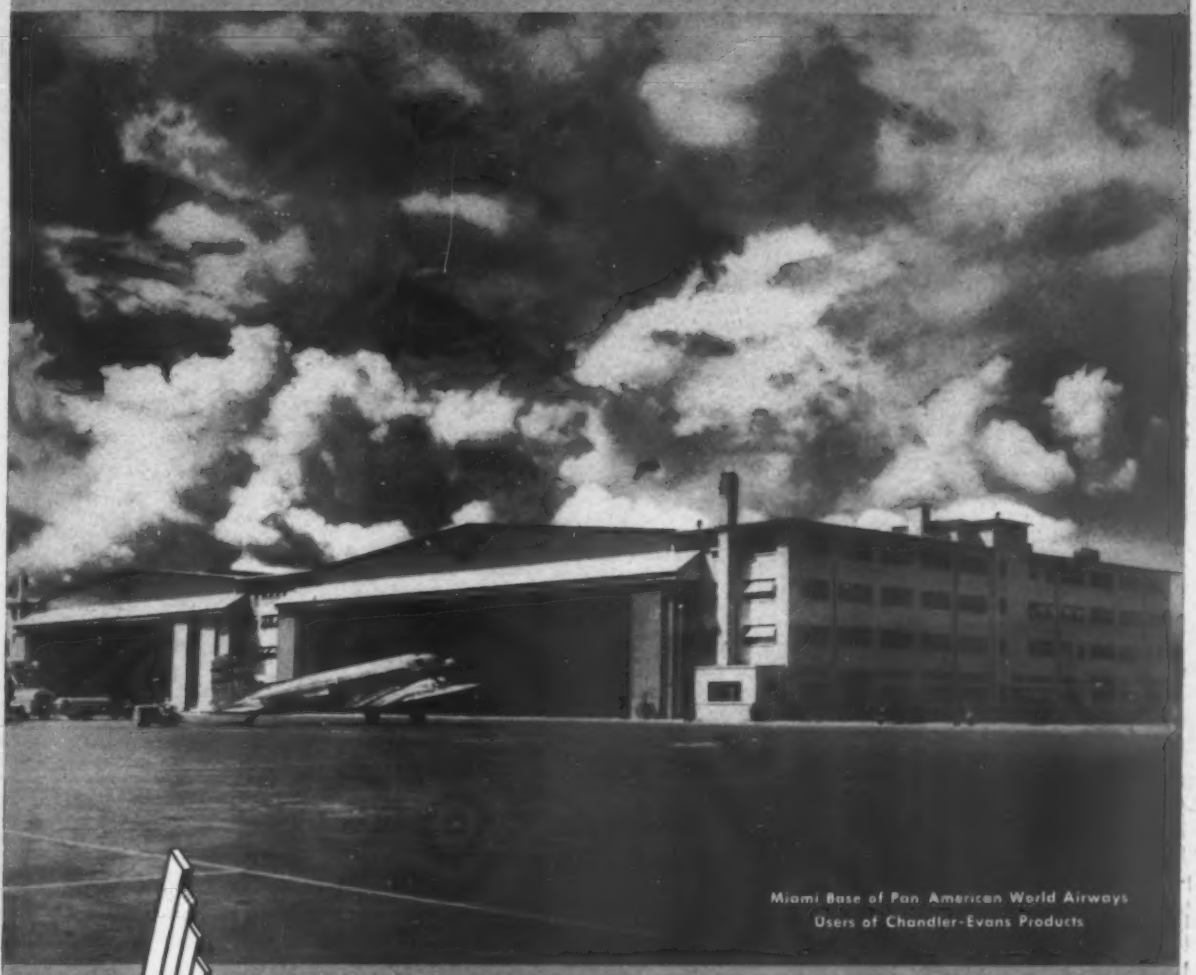
They are, front row from left to right: J. B. Rea, Engineering Test Pilot, Consolidated Vultee Aircraft Corporation; A. P. Fontaine, Asst. Director of Engineering, Consolidated Vultee Aircraft Corporation; H. W. Zipp, Chief Engineer, Boeing Airplane Company; W. E. Beall, Vice President, Engineering, Boeing Aircraft Company (Seattle); W. L. Wells, Chief Engineer, Curtiss-Wright Corporation (St. Louis); E. W. Norris, Manager, Technical Department, Aeronautical Chamber of Commerce; R. W. Miller, Chief, Commercial Projects, Republic Aviation Corporation; G. W. Lescher, Executive Engineer, Fairchild Engine & Airplane Corporation; F. R. Shanley, Division Engineer, Lockheed Aircraft Corporation (Factory "B"); G. W. Westphal, Chief Stress Analyst, The Waco Aircraft Company.

Second row, left to right: W. E. Burnham, Chief Engineer (Visitor), Freedman Burnham Eng. Corporation; H. Rawdon, Asst. Chief Engineer, Beech Aircraft Corporation; S. R. Gregory, Chief Engineer, Luscombe Airplane Corporation; R. H. Wendt, Vice President, Engineering, Taylorcraft Corporation; C. L. Bates, Chief Engineer, Northrop Aircraft, Inc.; W. H. Colcord, Administrative Engineer, Kellett Aircraft Corporation; J. Gertels, Chief Structures Engineer, Cessna Aircraft Company; W. M. Smith, Technical Asst. to Director of Engineering, Bell Aircraft Corporation; B. J. Salvadori, Staff Engineer, Boeing Airplane Company (Wichita); H. J. Stoneburner, Design Engineer, The Glenn L. Martin Company; A. H. Meyers, President & Chief Engineer, Meyers Aircraft Company; O. E. Holt, Head, Aerodynamics & Flight Test Section, Curtiss-Wright Corporation (Louisville).

Third row, left to right: W. D. Hall, Chief Engineer, Aeronca Aircraft Corporation; H. Kueck, Design Engineer, Beech Aircraft Corporation; J. W. McNary, Staff Engineer, Piper Aircraft Corporation; L. S. Lutton, Vice President, Engineering, St. Louis Aircraft Corporation; R. E. Reedy, Chief, Preliminary Design, Lockheed Aircraft Corp. (Factory "A"); C. E. Rowland, Chief Engineer, Commonwealth Aircraft, Inc.; Tom Salter, Chief Engineer, Cessna Aircraft Corporation; G. G. Cudhea, Asst. Chief Engineer, Fleetwings Division of Kaiser Cargo, Inc.; C. B. Barlow, Staff Engineer, Boeing Airplane Company (Wichita); W. C. Jamouneau, Chief Engineer, Piper Aircraft Corporation; Ed Burn, Director, Engineering & Research, Aeronca Aircraft Corporation.

Fourth row, left to right: Kendall Perkins, Asst. Chief Engineer, McDonnell Aircraft Corporation; C. E. Burgess, Vice President, Luscombe Airplane Corporation; I. C. Peterson, Secretary, Aircraft Technical Committee, Aeronautical Chamber of Commerce; C. V. Carlson, Chief Engineer, Howard Aircraft Corporation; C. M. Jamieson, Chief Engineer, Culver Aircraft Corporation; E. B. Sporleder, Executive Engineer, Douglas Aircraft Company, Inc.; M. P. Baker, Asst. Chief Engineer, The Waco Aircraft Company, N. E. Miller, Staff Engineer, Culver Aircraft Corporation; J. R. McGowan, Liaison Engineer, Douglas Aircraft Company, Inc.

ON TODAY'S COMBAT MISSIONS — ON TOMORROW'S TRADE ROUTES



Miami Base of Pan American World Airways
Users of Chandler-Evans Products

CECO

CARBURETORS, PUMPS AND
PROTEK-PLUGS

CHANDLER-EVANS CORPORATION — SOUTH MERIDEN, CONNECTICUT

Kaiser-Hughes Plywood Project Cancelled; New Experiments on Metal Plane Proposed

Final cancellation of the Kaiser-Hughes project for the construction of an experimental plywood flying boat has been decided upon by the Aircraft Production Board and War Production Board, followed by a suggestion that the Kaiser-Hughes craft be used as a mock-up to determine the possibility of constructing a similar plane from steel or other metal.

WPB Director Donald Nelson has submitted such a recommendation to Jesse Jones, head of the Reconstruction Finance Corp., but no action has yet been taken on it, according to authentic information in industry circles.

While WPB spokesmen will not discuss the reasons assigned for cancellation of the project, it is generally understood that tests have revealed the plane to be too heavy. A forthcoming aviation report of the Senate's Truman Committee will devote one section to the Kaiser-Hughes project, it has been learned.

Some leaders in the aircraft industry are strongly opposed to the recommendation that Kaiser-Hughes be permitted to switch over from experiments with the plywood plane to one of metal, on the grounds that it would constitute government-financing of experiments which might serve only to set up a competitive plane in the postwar market.

Financial Briefs

DOAK AIRCRAFT Co., Inc., Torrance, Cal., balance sheet report for October 31, 1943, shows assets of $1,173,214. Current assets were $730,927; current liabilities $745,825; capital stock $200,000; surplus and unidivided profits $158,172. Net sales, January 1, 1943 to October 31, 1943 were $2,583,137; net profit $261,456.

•

CONTINENTAL MOTORS CORP. of Feb. 8 declared a dividend of 15c per share on the outstanding common capital stock, payable March 10 to stockholders of record at the close of business Feb. 18. The company reports net profits, before audit, for the fiscal year ending Oct. 31, 1943, of $6,017,207, after all charges including depreciation, Federal income taxes, excess profits taxes, and after allowing for reserves and chargeoffs.

•

AIR ASSOCIATES, Inc., has declared a regular dividend of 20c per share on the corporation's common stock, payable March 8 to stockholders of record Feb. 29. With this payment, the company establishes the policy of declaring quarterly dividends payable on or about the 8th day of the months of March, June, September, and December rather than the 25th day of the same months as heretofore, thus enabling stockholders to receive the dividends before quarterly income tax payment dates.

Ryan Aeronautical Elects Two to Board of Directors

Phillips C. A. Smith

Two additional directors were elected to the board of Ryan Aeronautical Corp. at a recent meeting following approval of the majority of the corporation's stockholders of the management's proposal that the board be increased to five members. The new board members are Frank N. Phillips, Providence, R. I., president and director of the Washburn Wire Co., and an officer and director of several other eastern corporations, and C. Arnholt Smith, chairman of the board and vice president of the United States National Bank, San Diego, Calif., and president of the National Iron Works. Phillips has been one of the most substantial stockholders of the Ryan company since it was originally incorporated.

Victory Aircraft Directors Resign; New Board Set Up

The board of directors of Victory Aircraft Ltd., Malton, Ontario, headed by J. P. Bickell, has resigned and a new board has been constituted, it was announced by the Canadian Department of Munitions and Supply.

Reports from Canada indicated that Bickell retired as the result of a disagreement over the terms under which he undertook the presidency. This was precipitated by the attempt of the Government Department to name a new member for the board, which Mr. Bickell is said to have interpreted as a breach of the agreement.

V. W. Scully of Toronto has been appointed president of the company, in place of Bickell. To accept the position, Scully retired as president of War Supplies Limited, the Crown company that handles purchases in Canada by the U. S. Government. In this position, he will be succeeded by F. G. Rounthwaite, now general manager of North West Purchasing Ltd. Rounthwaite was formerly director of purchasing for the Washington office of the Department of Munitions and Supply.

Other directors, appointed to serve with Scully, are: Harold S. Beddoe, president, United-Carr Fastener Company of Canada; Major J. E. Hahn, Director General, Army Technical Development Board; Richard Riley, Grand Lodge Representative, International Association of Machinists; and L. F. Winchell, vice president and general manager, Hinde and Dauch Paper Company of Canada, Ltd.

CANADIAN CAR AND FOUNDRY CO. announces that production of the Curtiss dive-bomber at its Fort William, Ont., plant has reached the rate of one a day.

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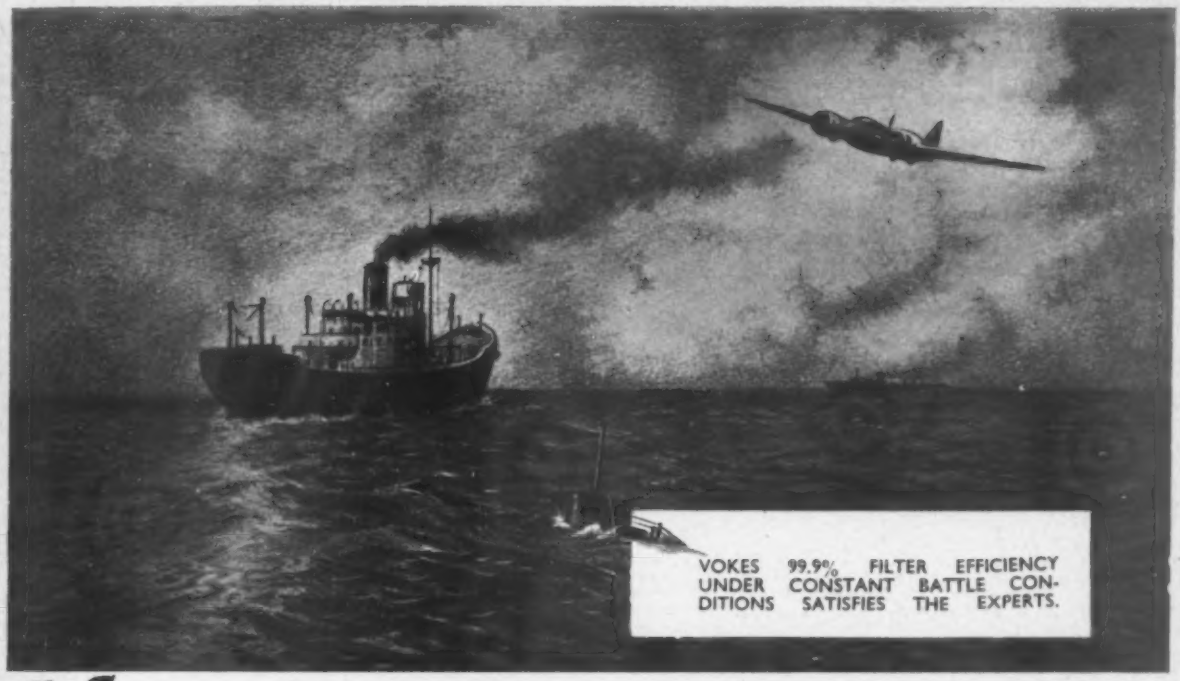
WHITING CORPORATION

Aviation Division

FILTRATION A 3 SERVICES PROBLEM



WE hear a lot of " talk " about man power naturally, because it concerns the people. But the engineer experts of the services have their own special problem, engine power. Aero-engines in their thousands, the mighty engines for submarines, auxiliary motor craft and mechanised units of the Army, each and every one has to be kept " fighting fit." That is why the filtration of air, oil and fuel oil to these engines is of such vital importance, because on purity of air, oil and fuel oil for engines depend power and speed. Our organisation is working to capacity to provide Vokes Air, Oil and Fuel Oil Filters to all branches of the services. H.M. and Dominion Governments approve and adopt Vokes Filters. Their 99.9 per cent. standard of filtration efficiency is unvarying, and has been tried and tested out under actual fighting conditions. Like everything connected with the fighting forces, Vokes Filters don't half do the job, but do it thoroughly.

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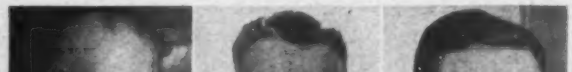

Bradley Golt Robinson

Maj. Gen. Follett Bradley, U. S. Army, retired, formerly in command of the First Air Force at Mitchell Field, N. Y., and air inspector, headquarters Army Air Forces, Washington, D. C., has been named assistant to the president of the Sperry Gyroscope Co.

R. C. Golt has been appointed Contract Coordinator for the Allison Division of General Motors Corp.

Consolidated Vultee Aircraft Corp. reports that **W. H. Robinson** has been appointed Chief of Contracts of its Field Division; **Charles Marvin** has been named chief tool engineer of the Fort Worth Division.

Aviation Securities Over the Counter

(Courtesy Merrill Lynch, Pierce, Fenner, and Beane)

	February 11 Bid	February 11 Asked	February 19 Bid	February 19 Asked
AIRLINES				
All American Aviation	3⅞	4	3⅞	4⅛
American Airlines Pfd.	109	111	109	111
American Export Airlines	28	29	28½	29⅛
Braniff	14½	14⅝	14½	14⅝
Chicago & So. Com.	12⅜	12⅝	12¼	12⅝
Chicago & So. Wts.	3½	4	3½	4
Continental Airlines	9½	.....	9½	10½
Delta Air	24	26	24	26
Inland Airlines	3¼	3¾	3¼	3¾
Mid Continent	5⅜	5⅝	5⅜	5⅞
National	12½	13½	13¾	14½
Northeast Airlines	8⅜	8⅝	8⅜	8⅝
Penn. Cent. Airlines Pfd.	30¼	31¼	30	30¾
MANUFACTURERS				
Aeronca	3½	4	3½	4
Air Associates Com.	9	9¼	8½	8¾
Aircraft & Diesel	1	1⅛	1	1⅛
Aircraft Accessories	2½	2⅝	3⅜	2⅝
Airplane & Marine	1⅞	2¼	1⅞	2¼
Airplane Mfg. & Supply	65c	75c	70c	80c
Central Airports	⅝	⅞	⅝	⅞
Columbia Aircraft Prod.	45c	75c	½	¾
Contl. Aviation	2¾	3¼	2¾	3⅛
Delaware Aircraft Pfd.	⅛	.....	⅛	.....
Gen. Aviation Equip.	1⅝	1⅞	1½	1⅞
Globe Aircraft	½	1½	½	1½
Harlow Aircraft	⅛	¼	⅛	¼
Harvill Corp. Com.	2⅛	2⅝	2⅛	2⅝
Harvill Corp. Pfd.	75c	90c	75c	90c
Interstate Aircraft & Eng.	3	3⅛	5¼	5¾
Jacobs Aircraft	3	3¼	3	3¼
Kellett Aircraft	1⅞	2⅛	1⅞	2⅛
Kenner Motors	70c	80c	70c	80c
Liberty Aircraft	10⅞	11¼	11	11½
Luscombe	½	⅝	½	⅝
Menasco Mfg.	90c	1	90c	1
Northrop Aircraft	4⅝	5	4¾	5⅛
Piper Aircraft Com.	4¾	5⅛	4¾	5⅛
Piper Aircraft Pfd.	13	14	13	14
Pitts. Aviation Ind.	4½	.....	4½	.....
Rohr Aircraft	4⅞	5⅛	5⅜	5⅞
Std. Aircraft Prod.	3¼	4	3½	4
Taylorcraft Com.	1½	1¾	1½	1¾
Taylorcraft Pfd.	4¾	5½	4¾	5½
Timm	35c	45c	40c	50c
Utd. Aircraft Prod. Pfd.	14½	15½	14½	15½

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Additional advantages: An action free temperature band adjustable to meet any requirement—eliminating unnecessary actuator operation near control point. Weight-savings up to 20%. Simplified wiring. And no vibration-sensitive contacts . . . no relays or follow-ups.

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The new actuator for AiResearch Automatic Exit Flap Control Systems meets such a challenge. Developed for a newer and bigger American bomber, it provides advantages for all aircraft.

SIMPLIFIED MAINTENANCE. The motor of this improved actuator can be serviced and brushes changed merely by *removing one spring clip!*

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DURABILITY. AiResearch's design has proven rugged under the toughest *load tests* . . . under rigid *temperature tests* ranging from -65° F to 175° F. And *life tests* have not been able to wear it out!

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PARKS AIR COLLEGE, INC.
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Leading Aviation Stocks

New York Curb Exchange

	Week Ended Feb. 12				Week Ended Feb. 19			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply B	300	3⅝	3⅝	— ⅛	1,200	3¾	3½	+ ⅛
Air Associates	300	9⅛	9	+ ⅛	1,400	9	8¾	— ⅛
Aircraft Accessories	1,800	2¾	2½	.....	2,100	2½	2⅜	— ⅛
Aro Equipment	700	8⅜	8½	.....	400	8½	8¼	— ⅛
Bellanca Aircraft	2,500	3⅛	2⅞	+ ⅜	1,000	3¼	3⅛	.....
Breeze Corp.	600	10	9¾	— ¼	3,300	10⅜	9¾	+ ⅛
Brewster Aero	1,500	3⅝	3½	+ ⅛	1,100	3½	3¼	— ⅛
Cessna Aircraft	2,400	6¾	6⅛	+ ½	1,500	6⅝	6⅜	— ⅛
Colonial Airlines	700	8⅛	7¾	.....	1,200	8¼	7¾	— ⅛
Fairchild Eng. & Air.	2,800	2¼	2⅛	+ ⅛	4,900	2¼	2⅛	— ⅛
Irving Air Chute	400	8	7¾	.....	400	7¾	7¾	.....
Republic Aviation	33,900	4⅜	3⅜	+1⅜	32,900	4⅞	4⅛	— ⅛
Ryan Aero	200	3¾	3½	+ ¼	200	3½	3⅜	— ⅛
Solar Aircraft	400	3	2⅞	+ ⅛	1,400	3⅛	3⅛	+ ⅛
United Aircraft Prod.	1,800	8⅝	8⅛	+ ⅜	1,400	9⅛	8⅝	+ ⅛
Western Air Lines	1,500	8⅜	7¾	+ ⅛	700	8⅜	8⅛	+ ⅛

New York Stock Exchange

	Week Ended Feb. 12				Week Ended Feb. 19			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
American Airlines	2,700	60¾	59¼	.....	1,600	60	58¾	— ⅛
Aviation Corp.	11,900	3⅞	3⅝	+ ⅛	30,800	4	3¾	.....
Beech Aircraft	2,300	10⅛	9⅞	+ ⅜	2,800	10⅜	9⅞	— ⅛
Bell Aircraft	4,800	13¾	12⅞	+ ⅛	5,700	13⅞	13⅛	.....
Bendix Aviation	6,800	34¼	33¾	.....	4,500	34⅜	33⅞	.....
Boeing Airplane	7,500	15	14⅛	+ ⅜	9,000	15¼	14⅜	+ ⅛
Braniff Airways	18,700	14⅞	13⅜	+ ⅛	14,500	15	14⅜	+ ⅛
Consolidated Vultee	8,500	13⅛	12½	+ ¼	15,000	13⅜	12⅞	+ ⅛
Consolidated Vultee pfd.	1,300	21¾	21⅜	.....	1,300	21¾	21	— ⅝
Curtiss-Wright	11,400	5⅞	5⅝	.....	11,800	6	5¾	.....
Curtiss-Wright A	2,800	17	16½	+ ¼	7,900	17¼	16⅜	— ⅛
Douglas Aircraft	3,700	51¾	49¼	+2⅛	5,300	52⅛	51	+1
Eastern Air Lines	2,300	37	35½	+1⅛	5,600	37⅜	36⅝	+ ⅛
Ex-Cell-O	1,000	24¼	24	+ ⅛	3,300	25⅞	24½	+1⅛
Grumman Aircraft Eng.	1,300	12	11½	+ ⅛	1,700	12	11⅞	+ ⅛
Hayes Industries	500	6⅞	6⅝	— ⅜	1,400	7	7	+ ⅛
Lockheed Aircraft	16,800	16⅞	15⅞	+ ¾	23,200	17⅜	16½	+ ⅛
Martin, Glenn L. Co.	5,100	17¾	17⅛	+ ⅜	7,700	18⅛	17¾	+ ⅛
National Aviation	2,100	11¼	10¼	.....	5,100	11⅞	10¾	+ ⅛
North American Aviation	8,000	9⅛	8⅝	+ ¼	7,500	9⅛	8¾	+ ⅛
Northwest Airlines	3,600	19⅛	18⅜	+ ½	2,300	19⅜	18¾	+ ⅛
Pan American Airways	10,700	31⅞	30⅜	— ⅞	12,300	31⅝	30½	+ ⅛
Penn-Central Airlines	2,700	15¼	14¼	+ ¼	600	15	14¾	— ⅛
Sperry Corp.	4,500	26⅛	25⅛	+ ⅛	4,200	26⅜	25⅜	— ⅛
Thompson Products	500	35¾	35	+ ¾	500	36	35¾	.....
Trans and Western Air	1,400	19⅛	18¼	+ ⅛	2,000	19⅛	18⅜	— ⅛
United Air Lines	8,300	25⅛	23¾	+ ½	7,100	25	24¼	+ ⅛
United Air Lines pfd.	1,800	107⅜	105¾	+1⅝	700	107½	107⅜	+ ⅛
United Aircraft	6,500	28⅜	27⅝	+ ⅛	7,800	29¼	28¼	+ ⅝
United Aircraft pfd.	500	102	101	—1	700	101¾	101	+1⅛

Convair Develops New Coating for Magnesium

A protective coating has been developed by Consolidated Vultee Aircraft Corp. which will encourage the use of magnesium in the construction of large aircraft. The new coating, electrically-induced, makes magnesium alloys as noncorrosive and abrasion-resistant as aluminum alloys, Convair engineers say. They describe it as an anodic film "extremely tight and very resistant to electrical current and abrasion, capable of withstanding the potential of 110 volts." The engineers say accelerated tests show magnesium alloys coated with the new finish holding up as well as, and in some cases, better than anodized duraluminum, and that the abrasion resistance is 50 to 100 times superior.

ATLAS PLYWOOD CORP. reports for the six months to Dec. 31, net profit of $318,286, or $1.01 a common share.

Howard Field Heads Firm

Howard Field, Jr., former staff hydraulic engineer for North American Aviation, has established his own engineering office in Los Angeles. Among the first applications of hydraulics to aircraft were those designed by Field in the early 30's when he was an engineer with Northrop Aircraft, Inc. He was a lieutenant in the Army Air Corps during World War I.

Field

BREEZE CORPORATIONS, Inc., has voted a dividend of 40c per share on the common capital stock, payable March 10 to stockholders of record March 1. In 1943, the company paid total dividends of $1.60 per share.

FAMOUS FORERUNNERS OF WINGED VICTORY OVER BERLIN, ROME AND TOKYO

BELLANCA planes gave the three Axis centers a preview of American air prowess many years before Hitler made the fatal mistake of starting this global war.

It was a Bellanca cabin monoplane that Chamberlin flew non-stop in 1927 from New York to Germany. It was a Bellanca that Williams and Yancey piloted in 1929 to Rome. And it was a Bellanca that Pangborn and Herndon guided over the Pacific on their sensational Tokyo flight of 1931.

These famous forerunners of winged victory blazed world sky trails which U. S. Army Air Forces are traveling with more and more powerful blows at our savage enemies.

Many other Bellanca transoceanic flights pioneered international air routes. Bellancas took Hoiriis and Hillig from Newfoundland to Germany in 1931 — Darius and Girenas from New York to Germany in 1933.

Of great significance was the 1931 world's record non-stop flight from New York to Istanbul, Turkey — the 5,000 mile classic negotiated by Boardman and Polando. And it was another record-breaking Bellanca that Mollison flew in 1936 from Newfoundland to England (9 hours, 15 minutes), an air trail now followed frequently by many United Nations warplanes.

Another historic trail-blazer was the Bellanca flown by Dr. Richard Light across the Atlantic, across Europe, across Asia and the Malay States to Manila — a prophetic path which many modern American planes are flying to Victory.

Yes, they were all Bellancas... these and the many other historic planes that pointed the way to progress through more than twenty years of American air power. And today Bellanca engineers contribute to Victory with their precision-built armament, warplane components and the AT-21-BL gunnery crew trainer. They're planning, too, for your personal peacetime plane!

Historic Bellanca Flights

1 — N. Y. to Germany, 1927 (Chamberlin)
2 — Maine to Rome, 1929 (Williams-Yancey)
3 — Tokyo to U.S.A., 1931 (Pangborn-Herndon)
4 — N. Y. to Istanbul, 1931 (Boardman-Polando)
5 — Newfoundland to England, 1930 (Boyd-Connor)
6 — Newfoundland to Germany, 1931 (Hoiriis—Hillig)
7 — N. Y. to England, 1931 (Pangborn-Herndon)
8 — N. Y. to Germany, 1933 (Darius-Girenas)
9 — N. Y. to Ireland, 1934 (Pond-Sabelli)
10 — Newfoundland to France, 1934 (Adamowicz)
11 — N. Y. to Manila via Europe, 1934 (Dr. Light)
12 — Newfoundland to England, 1936 (Mollison, piloting speed plane pictured above)

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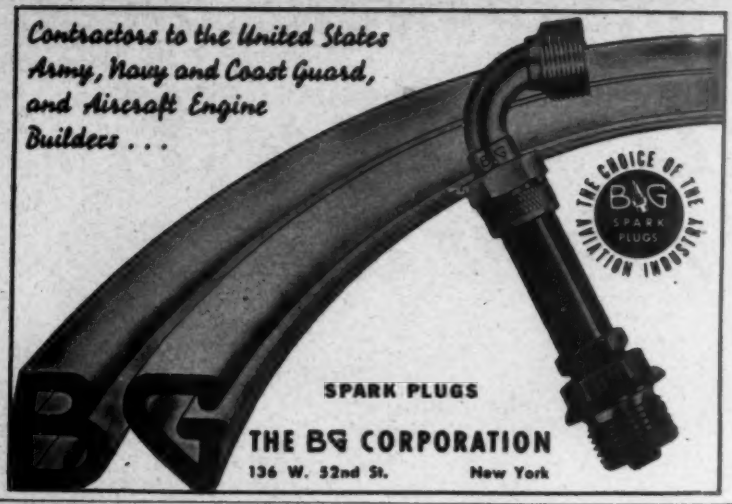
BELLANCA AIRCRAFT CORPORATION
NEW CASTLE, DELAWARE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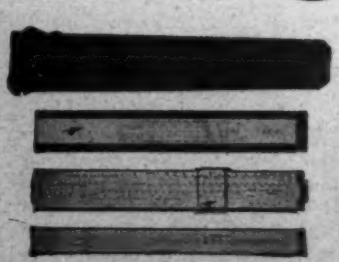

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COX AND STEVENS AIRCRAFT CORPORATION

P. O. Box 30 Mineola, N.Y.

Foley

(Continued from page 78)

missed, but some of what appears to b aviation's failure to perform is explain able.

The volume of market demand for aut mobiles justifies the expense of efficie and comprehensive proving ground lab oratories, mentioned in these columns re cently. It seems that aircraft manufactu ing must do more along this line than has in the past. If it cannot on an ec nomically sound basis, we must not con cede that each airline must continue t act as its own proving ground. This ju does not make sense. The interpositio of our Air Transport Laboratory may b the way to solve this problem.

Secondly, the type of market sold by the automobile manufacturers—name the general public—differs greatly fro the airlines. The public voice an the public pulse are real determinates i the field of auto manufacture. A condi tion which approaches this must be a pa of the future aircraft operator—manufac turer relationship. The day of "This i it—you take it" is over!

Thirdly, there's a difference betwee both the operating know-how and abilit to cope with quirks of the auto buye and the airline. This is the factor whic accounts for the all too frequent dirt design details—the ones that stand ou and almost brag that they are presen because their creator knew the airline would take care of them in their ow way.

The manufacturers are not alone i their sin. The airlines have not alway done their share of educating and co operating. For some obscure reason ther is a lack of unanimity in the approac to solving these problems. The Lor knows there are enough truly competi tive elements in air transport withou our creating unnecessary ones. Soun practical design is a clear-cut matter fo united front action. Individual airlin pride, sniping at the ideas of one another and reluctance to expose "secrets" ca only postpone the day when we can a share in the benefits of this forward step

There are several things we would lik to know to guide us in our futur thinking on maintenance. Both airline and manufacturers should answer, an if the answers indicate an interest, w will wish to spearhead a campaign t translate the answers into action.

1. Is maintenance a necessary factor in aircraft design?
2. If so, what specifically would you wish done to guarantee it due recognition?
3. How practical is the "borrowing" of design engineers by an airline for operating education?
4. We have thought of writing a well illustrated book, "How Not to Design an Airplane." Would this or a similar effort be worthwhile?
5. What can be done in trade journals to drive home the points? Would a regular feature presenting a single error and the necessary corrective measure be of value?
6. Do the aircraft manufacturers agree that there is room for increased maintain-ability in their product?
7. How do they think the problem should be attacked?

If there is need for action, your answer to these questions can be a good way t get it. If we take time now, we can save time later.

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Huge power plants for B-24 Liberator bombers, moving toward completion on the Rohr production line.

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Manufacturing Briefs

CURTISS-WRIGHT CORP. announces that a new attack bomber version of the Navy's Helldiver dive bomber, known as the A-25, now is being delivered to the U. S. Marine Corps. The new plane is said to be capable of carrying a greater bomb load faster and farther than any similar type plane in the world.

•

FISHER BODY DIVISION, General Motors Corp., reveals that it is taking part in the manufacturing program of the Army's new bomber, the Superfortress. The division is building major assemblies and parts required by the three assembly plants currently engaged in the plane's construction. Eight of the company's plants in Michigan and Ohio are involved.

•

BUICK DIVISION, General Motors Corp., announces it is tooling to manufacture 14-cylinder cargo plane engines similar to the Pratt and Whitney motor being built for Liberator bombers.

•

CONTINENTAL MOTORS CORP. sent notices to its stockholders Feb. 7 announcing postponement of the annual meeting of the company, scheduled for Feb. 16, until a date to be announced later.

•

BOEING AIRCRAFT CO. announces that a $750,000 cafeteria will be opened at its Seattle plant about April 1. The building embraces almost 50,000 square feet in dining, kitchen, and storage space. A food service department will operate 40 mobile food trucks, dispensing hot dishes, beverages, and desserts throughout the factory area.

•

FAIRCHILD ENGINE AND AIRPLANE CORP. has been permitted to announce details of its technique for chemically bonding pure aluminum to steel. The process, known as Al-Fin, was perfected by Marshall G. Whitfield and Victor Sheshunoff, research engineers with the Al-Fin Corp., a wholly owned Fairchild subsidiary. It makes possible marked reduction in the structural weight of an aircooled engine, and greatly improves the cooling efficiency of the cylinders.

DPC Authorizations

REYNOLDS METALS CO., Richmond, Va., for additional facilities at a plant in Louisville, Ky., at a cost of approximately $600,000, overall commitment of approximately $1,500,000.

•

BOEING AIRCRAFT CO., Seattle, Wash., for additional plant facilities in Renton, Wash., at a cost of approximately $2,500,000, overall commitment of approximately $11,700,000.

•

LOCKHEED AIRCRAFT CORP., for additional plant facilities at Burbank, Calif., at a cost of approximately $370,000, overall commitment of approximately $8,000,000.

•

PACKARD MOTOR CAR CO., for additional equipment at a plant in Detroit at a cost of approximately $635,000, overall commitment of approximately $3,285,000.

•

ADEL PRECISION PRODUCTS CORP., for additional equipment at a plant in Burbank, Calif., at a cost of approximately $120,000, overall commitment of approximately $370,000.

Classified

HELP WANTED—Pratt & Whitney Aircraft offers excellent opportunities in the engine installation field to persons trained in aircraft or engine installations. Among our many urgent requirements are the following: Aeronautical and mechanical analytical engineers for heat rejection, fuel systems, vibration and power. Design engineers, Layout draftsmen, Checkers, Detail draftsmen, Technical illustrators, Project engineers, Test engineers (flight test), Engineering aides, Sheet metal workers, Aircraft welders, Metal workers, Assembly shop helpers, Wood workers. To arrange for an interview, please write or wire your qualifications to Sales Engineering Department, or phone 8-4811, extension 391.

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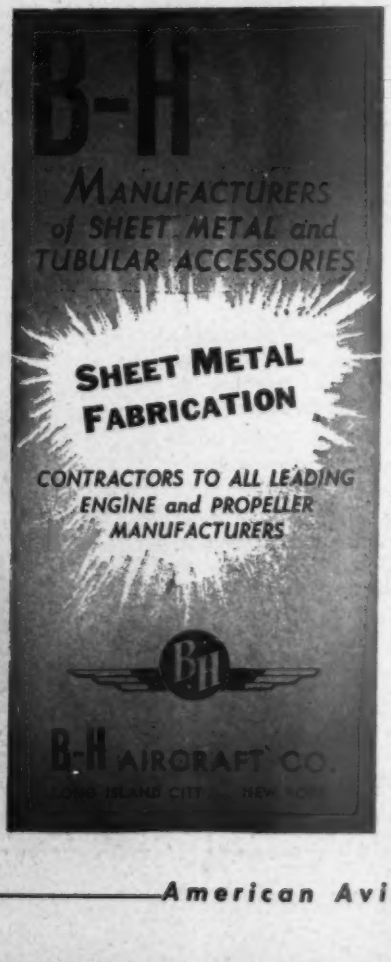
All hiring shall be done in conformance with the War Manpower Stabilization Act.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